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Weaknesses of Organized Medicine

WILLIAM H. ROSS, M.D.

PRESIDENT OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK

Brentwood, New York

Organized medicine suffers from several weaknesses. One of them is the aloof relationship to health administration and to various health activities of a multitude of social organizations.

Social changes will continue to increase in America and social organizations to meet social needs will become more and more active. It will be better for the future position of the profession of medicine to guide the advent of these activities; determine their soundness and give them leadership in medical matters. Health activities of social organizations and the state must be considered as expressions of social medical need. It will be better to recognize and help to meet the problem than it will be to find something wrong with our relationship to it and then have to try to change that after the solution of the problems has passed the formative stage.

The profession of medicine does not always realize that it is not organized for administrative purposes, even though it is the only authoritative source of medical knowledge and the only group competent to give technical medical service. All medical activity outside of the private practice of medicine requires cooperation of an official organization with medicine in order to function and it can make use of social organizations if the limitations and responsibilities of this group are understood. It is medicine's obligation to furnish leadership and in

leadership rests the future position of medicine in public opinion.

Another weakness in organized medicine is that our own profession needs a good deal of education in present-day social medical needs and in the degree of public interest in these needs.

Organized medicine needs an awakening as to the value of unanimous opinion and its responsibility for being bound by the opinion of the majority. Though organized medicine is a representative body and its conclusions are reached as the result of conference by delegates representing its component parts, it never seems to accept majority opinion without mental reservation, nor to long remember the value of unanimous opinion in working out its position in public relationship to many things, such as the constructive enactment of medical laws by the Legislature, the administration of existing laws, and support of departments of health and welfare responsible to the public.

The profession is, properly, relatively independent and individualistic in scientific medicine or in medical research and in the individual application of it in practice. In all other respects, including relationships to hospitals, to health organizations and to the departments of the state having health interests, it should act by unanimous opinion, supported by every component county

medical society, and every individual of the county medical society. It is a striking fact that organized medicine rarely uses the power of unanimous opinion in dealing with its detailed relationships to public affairs. When the State Society reaches a decision, it should be binding on its membership since the State Society is only a union of its component parts and the component parts make the decision.

Strangely, county medical societies feel at liberty to use their independent judgment regardless of whatever decision they have helped the State Society to reach and oppose, by their decisions, opinions that they have helped to form. This is true, also, of individuals in county societies, after the county society has reached a decision. As a profession we must learn better the value of organization than we seem to know it now. The action of a standing committee of the State Society, when accepted by the Council of the State Society or the House of Delegates, should be binding in its authority upon every member, but just try to get this ideal result. In what other way can we ever deal with medical problems of relationship to health organizations or government? I want to urge every doctor to make his county society a better organization so as to meet professional problems when they confront it, and which at any time may become more active if the government undertakes to exercise its parental function to meet social problems of health and sickness service.

Since the organized profession of medicine is the most competent body to consider social medical problems, it should realize that it must offer plans for their solution in advance of social agencies and then, leadership in their administration. It is time that this should be done. Social problems are pressing for solution. If medicine does not fulfil public expectation, it will come to have a somewhat more unsatisfactory position before the public than it has today. This calls for wisdom, statesmanship, and leadership.

The only way to maintain a desirable position in public opinion is to deserve it. We have been so busy curing disease that we have neglected to think of these things as society became more complex. We have an increasing public medical service obligation. We must overcome our aloofness to the importance of readjusting our attitude and relationships to present-day social needs in which private organizations and the state, itself, are showing so much interest and activity. Medicine can have a leading part in all this if it wants to.

If the medical profession will engage in some hard and unbiased thinking regarding the problems that confront medicine and try to know a little more about these problems than anyone else does, it will be the surest means of maintaining leadership and ability to give guidance in the distribution of the kind of health and sickness service that present-day social needs and public opinion indicate the need of. Who among all the public knows so much of how to do this as the medical profession?

If organized medicine will seriously undertake to discuss these problems and offer practical methods of solution, it can be done without departing from its usual medical meeting program by just adding a study of social problems. Organized medicine should seriously undertake to discuss these problems of social need and the relationship of medicine to them. Then, when we have practical methods to offer, we must offer them to the public through our own medical channels, but in such a way that newspapers will copy. Outside of this, medicine should not be adverse to furnishing news information to newspapers over the signature of the county or state society.

The public must be given the means for public edu-

cation in health and sickness service. We cannot expect them to go along with us unless this is done. We must sooner or later combat the kind of public health publicity now indulged in by many social organizations. To do this organized medicine must employ assistance enough. It cannot be done by voluntary labor.

The whole field of public health and sickness service would escape the penalty of artificial publicity by this method. The present method of publicity is wide and without much depth.

The problems of medicine are coming to the front very fast. Some of them are very real. While the history of organized medicine shows that some of them have been considered in former years, they are now pressing harder than ever before for solution because our civilization has become more complex and social changes with many needs have come to the front.

I have been a student of these things this year, without theory and without sentiment. My contacts and opportunities for study of them have been large. I have had a part in one hundred and thirty-six medical meetings, conferences, and committee meetings. Out of it all has come a degree of orientation unexpected in the beginning. We are slowly coming near to the conditions that have confronted medicine in the older countries. The dangers to professional independence may be avoided in this country but it will not be by shutting our eyes to the problems or by destructive criticism of effort of social organizations and the government to meet problems of health and sickness service. Since social complexities have caused an increasing exercise of the parental function of the state in so many other countries, and since the exercise of this parental function has grown in some of the soundest governments for a good many years, and since organized medicine in these very countries is now offering proposals of methods for extension of health and sickness service, it is not too early for the medical profession in America to consider these great problems in their beginning in this country.

Treatment of Pernicious Anæmia

Further work on the treatment of pernicious anæmia with desiccated defatted stomach is described by C. C. Sturgis and Raphael Isaacs in the *American Journal of Medical Sciences* for November. They employed hog stomach which was finely minced and dried at low temperature, after removal of the mesenteric and fatty layers. It was then defatted by repeated washing with light petroleum and yielded an almost tasteless product, which was given with tomato juice. A hundred grammes of fresh stomach gave 11-15 g. of dried material. Details are given of the successful treatment of 22 patients by this means, and it is stated that 7-10 g. of the dry material were found to be satisfactory as a maintenance dose. In the early stages 10 g. for each million deficit in the red cell count is recommended. An attempt was made to find out which part of the stomach supplied the active substance. Thus one patient, later reacting excellently to whole stomach, did not respond to treatment with the muscular layer, dried and defatted. On the other hand, five patients were treated with mucosa alone, also with practically negative results in four cases, while the fifth had a slight reticulocyte response but no complete remission until whole stomach was given. The authors explain these results by adopting W. B. Castle's hypothesis of an enzyme secreted by the mucosa and acting on muscle protein. In the present case this action is brought about during the preliminary mincing of the fresh stomach which allows the enzyme to make contact with the muscular layer. In the same number of the journal is an account, by J. E. Connery, of the treatment of pernicious anæmia patients with an aqueous extract of fish liver. In making the extract the oil was removed and fraction G, as described by Cohn, Minot, Alles, and Salter, was used. Six patients were successfully treated, details of each case being given. Mammalian meat, liver, and kidney were excluded from the diet. The livers of cod, haddock, and other fish were employed for the extract. Improvement followed comparable to that seen in treatment with mammalian liver.—*Lancet*, Dec. 6, 1930.

Is Spinal Anesthesia a Plaything or a Necessity in Surgery?*

HENRY F. GRAHAM, M.D., F.A.C.S.

New York, N. Y.

Spinal anesthesia has suffered in the past from two things:

1st. When death occurs it is sudden and dramatic. Only recently have the cause and prevention been understood.

2nd. Many inexperienced administrators, without even a careful study in advance, have rushed in "where angels fear to tread."

Wayne Babcock, after many years of splendid example, says, "Mortality with spinal anesthesia usually is to be blamed upon the surgeon." There has been much talk of spinal deaths but almost none of comparative total mortality between general and spinal anesthesia. We now realize, from exact statistics, how much spinal anesthesia has really done to lessen mortality when properly used.

For example: William Miles of London has operated upon 400 cases of cancer of the rectum. His mortality with general anesthesia could not be brought below 17% but he lowered it to 9% by changing over to spinal anesthesia without any other change in technique—a reduction of nearly 50% in the number of deaths.

Rankin and McClusky, from the Mayo Clinic, speaking of spinal anesthesia in lesions of the colon, mention "The remarkable decrease, to the point of almost complete abolition, of post-operative pulmonary complications."

Eliason, Professor of Surgery at the University of Pennsylvania, analyzed 225 operations upon the upper abdomen:

75 received ether	2 died—post-oper. pul. complications	8 %
75 splanchnic anesth.	2 died—	" "
75 spinal anesth.	0 died—	" "

That is to say, pulmonary complications under spinal anesthesia were 1/3 as frequent as under ether. There have been only 3 post-operative pneumonias following spinal anesthesia at the Jackson Clinic in 1,283 cases.

Simpson of Rochester, N. Y., from his experience of 750 cases, says, "It has been stated that pulmonary complications are as frequent under spinal as under general anesthesia but—I have had practically none."

I hope that we may have many more of these statistical studies in large series of similar cases in the future. I am confident that the conclusions will be strikingly in favor of the spinal anesthesia, when properly used. But do we know how to use it properly?

It can be definitely stated now that for any operation below the waist spinal anesthesia can be used, in suitable cases, by a good anesthetist, without danger. It eliminates shock.

It should always be used in excision of the rectum unless an absolute contra-indication is present. It has been adopted for these cases by the following: William Miles of London, The Mayo Clinic, The Crile Clinic, The Lahey Clinic, Allan Whipple of the Columbia Medical

Center, John Erdman of the Post-Graduate Hospital, John Douglass of St. Luke's Hospital and Eugene Pool of the New York Hospital.

Spinal is the anesthetic of choice for intestinal obstruction because of the contraction of the intestines and the marked relaxation of the abdominal wall. W. J. Mayo says, "Spinal anesthesia should be used in intestinal obstruction." And Marbury believes that it is "As much indicated as the operation itself."

For herniorrhaphy and all pelvic operations it possesses many obvious advantages. For fracture work or operative procedures upon the lower extremities the muscular relaxation is of great value.

When we consider operations upon the stomach or gall-bladder we find a diversity of opinion. Dr. Judd of the Mayo Clinic and Allan Whipple of the Presbyterian Hospital, New York, consider spinal the best anesthetic and prefer it to ether. Simpson of Rochester, N. Y., says, "It should head the list in all difficult gall-bladder and stomach work." Personally, I think that it should be employed in these cases only by those having sufficient knowledge and experience to choose their subjects properly and administer it safely. Labat claims that he has never had a death from spinal anesthesia and no one has disputed that claim to my knowledge. Forgue has operated upon 4,500 cases without a death due to the anesthetic. During the Clinical Congress of Surgeons in Philadelphia last October spinal anesthesia was used and discussed in the following hospitals:

The University of Pennsylvania Hospital—Eliason.
The Temple University Hospital—Babcock.

The Women's Medical College Hospital.
The Philadelphia General Hospital.

The Lankenau Hospital—Deaver.

The Methodist Episcopal Hospital of Philadelphia.
From far off Muscat, in Arabia, Harrison writes, "Spinal anesthesia is the anesthesia of choice for surgeons working in the jungle." Frank H. Lahey of Boston is generally recognized as one of the best surgeons in the United States. In a personal letter dated December 26, 1930, he says, "We use spinal anesthesia in about 95 per cent of all our abdominal cases. We consider that it has a very definite place in surgery at the present time." It is used in 70 per cent of the operations at the Jackson Clinic. •

I have the facts from a few New York hospitals. The percentages are estimated only.

The Presbyterian Hospital	30% of the abdominal cases
Bellevue Hospital	40% of all cases
" " First Division	30% " " "
" " Second "	30% " " "
" " Third "	30% " " "
" " Fourth "	60% " " "
" " Genito-Urinary	50% " " "

The Post-Graduate Hospital has a school of anesthesia, otherwise spinal would be used more. One surgeon uses it for everything below the diaphragm. Dr. Albee uses it in about 15 or 20 per cent of his cases. Dr. Erdman prefers it for carcinoma of the rectum.

Matas of New Orleans uses it for the lower half of the body. Cottle of the Naval Hospital in Washington

* Read before the Associated Physicians of Long Island, January 31, 1931.

say, "We are going in strong for spinal."

On my service, the First Surgical, at this hospital, the Methodist Episcopal of Brooklyn, we have used spinal anesthesia for over two years in about 200 cases without a death. We are very certain that we have saved many lives by its use.

In conclusion I quote from Evans' book: "A mastery of spinal anesthesia will place in the surgeon's hands the safest, quickest and most satisfactory anesthesia known to-day for use in a great number of different conditions."

474 First Street, Brooklyn.

Thrombophlebitis Following Tonsillectomy*

CHARLES A. ANDERSON, M.D., F.A.C.S.
New York, N. Y.

Inflammation of the veins of the tonsillar fossae following the removal of tonsils and adenoids is a condition much more common than one would realize from the present day literature.

Drs. George Fetterolf and Herbert Fox in 1923, during their study of Post-Tonsillectomy Pulmonary Abscess, removed the tonsils from dogs after having infected the tonsillar fossae by the introduction of sutures soaked in a suspension of bacteria (these bacteria being hemolytic streptococci and staphylococci), and by swabbing the fossae with infected bacteria. Two days after this procedure, there was found at the area of operation a congestion of all varieties of vessels, and a large number of thrombi near the surface and deep in the tissues. These thrombi were attached to the vessel walls and were well developed by the end of the second day. Small patulous capillaries were found in this area but the large veins were usually thrombotic.

A typical case of thrombophlebitis presents the following findings: from two to twelve days following operation there occurs a slow bleeding from the adenoid or tonsillar region together with a temperature ranging from 100 to 103, sometimes chilliness and general malaise. The bleeding is never very severe; one or both fossae or adenoid space is filled with blood clot which is soft and may be removed without difficulty. The underlying hemorrhage is easily controlled with pressure and rarely does a vessel have to be tied off; although the postnasal space usually has to be packed for a short time. Within a few hours the bleeding recurs, often from the opposite fossa and rarely from the site of the original oozing. This condition occurs most frequently in adults following local tonsillectomy, but also occurs in children and very frequently from the region of the adenoids.

Secondary tonsil and adenoid hemorrhage has usually been attributed to the separation of a slough or the traumatizing of the fossae; but in our opinion, practically all of these cases are due to infection, and the resultant softening of the blood clot in the small vessels, which terminates in bleeding.

During the years 1929 and 1930 there were performed in the Otolaryngological Service of the Methodist Episcopal Hospital 3237 operations for the removal of tonsils and adenoids. There were twenty cases of secondary hemorrhage in this series; thirteen of these were adults following local tonsillectomy, and seven were children. In fifteen of these cases there was bleeding from the tonsil fossae and in five, from the postnasal space. Eight

of these cases were typical thrombophlebitis; one occurred on the second day following operation, three on the third, five on the fourth, five on the fifth, four on the sixth and two on the seventh. Two of the series were transfused. These cases all recovered and left the hospital from three to seven days following readmission.

The operation of tonsillectomy and adenectomy is a major operation but the layman and a large majority of the medical men look upon the procedure with too little concern. All cases for operation should be instructed as to the care of the teeth and gums preceding operation. An antiseptic mouth wash and gargle should be used for a few days before admission to the hospital. Careful surgical technique should be followed by the doctors, assistants and nurses, as in any major operation. Gloves should be worn by both operator and nurse, and the instrument nurse should take as much care of her hands and instruments between cases as in any other operative case. Ligatures should be tied and not transfixed unless absolutely necessary. Two per cent mercurochrome should be applied to the tonsillar fossae, and either one-half of one per cent mercurochrome, or twenty per cent argyrol, should be used in each nostril in all adenectomy cases, following operation. If thrombophlebitis occurs, the patient should be given complete rest; strontium or sodium salicylate, grains 50 to 100, should be administered by rectum in cases with temperature. Two per cent mercurochrome should be applied to the tonsillar fossae once a day. Transfusion should be resorted to in cases of persistent bleeding, when a drop in the number of red cells and the percentage of hemoglobin demonstrate it to be indicated.

We firmly believe that all cases of secondary hemorrhage, following tonsillectomy and adenectomy, are due to a thrombophlebitis of greater or less extent in the tonsil fossae or postnasal space.

It certainly is unusual that 3217 cases could have a separation of the slough without bleeding and only twenty cases should have a secondary hemorrhage, unless there was more than the ordinary degree of infection.

32 Eighth Avenue, Brooklyn.

Federal Study Reveals Extent of Dental Deficiencies

Defective teeth were found the most frequent of physical shortcomings in a group of 7,632 elementary school pupils in 45 modern consolidated schools. It was found that 66 per cent of the boys and 61 per cent of the girls have decayed teeth. Pupils with the greatest number of decayed teeth are in age groups, 5, 6, 15, 16, the study discloses. The average number of defective teeth for boys of all ages is approximately three, and for the girls approximately two.

* Read before the Associated Physicians of Long Island, January 31, 1931.

A Résumé of Intracranial Hemorrhage in the Newborn*

WALTER R. COLES, M.D.
New York, N. Y.

Intracranial hemorrhage in the newborn is comparatively common. It has been recognized generally, as such, only in recent years. Many deaths formerly ascribed to other causes were due to this condition.

Out of 4,888 babies born in the Methodist Episcopal Hospital, Brooklyn, N. Y. (excluding stillbirths), over a period of thirty-four months, there were 55 diagnosed as having had an intracranial hemorrhage. These were classified as such only where the symptoms, lumbar punctures, or autopsy made the diagnosis certain. How many small hemorrhages there were, which gave no real symptoms or signs, it is impossible to determine.

Casually, this does not seem like a large number. Calculation of the percentage, however, gives 1.12 per cent. With a service delivering an average of very nearly 150 babies per month, it means approximately two cases each month.

Of these 55 cases, 36, or 65.4 per cent, died.

There was a total of 131 deaths in this period (not including stillbirths), a great number of these being prematures of a non-viable age. These totalled 77 in number, leaving 54 viable babies which died. Of this number brain hemorrhage caused 66.6 per cent of the deaths.

There have been many disputes and surmises as to the etiology of the condition.

An analysis of the 55 cases is presented.

The positions were as follows:

L. O. A.	16
R. O. A.	5
L. O. P.	12
R. O. P.	5
Breech	12
Brow	1
Undiagnosed	4

The type of delivery:

Spontaneous	21
Forceps	22
Breech Extraction	6
Version and Extraction	2
Precipitate	1
Cesarean	3

There is a general lay opinion, and amongst many doctors, that a brain hemorrhage is a sequel of a forceps delivery. It can be seen from these figures that the condition arose as frequently in spontaneous births as in instrumental deliveries.

It is of interest to note that in this series it occurred three times as often in left-sided positions as in right-sided. This, however, is probably because left-sided positions are normally in excess of the right-sided.

Only 8 babies showed signs of hemorrhage elsewhere indicating hemorrhagic disease of the newborn.

The coagulation time was recorded in 17.

10 showed between 3 and 4 Min.	
3 " " 4 and 5 "	
1 " " 5 and 6 "	
2 " — 7 "	
1 " — 11 "	

* Pediatric Department Methodist Episcopal Hospital. Read before the Associate Physicians of Long Island, January 31, 1931.

In the last-mentioned there was a definite hemorrhagic disease with gastro-intestinal bleeding—showing a brain hemorrhage as only a part of the general picture.

In the greater majority of those taken the coagulation time was within normal limits. It is generally conceded that the coagulation time bears no general relation to this condition.

The length of labor seemed to have no bearing—varying from no labor in a cesarean section and a short labor in a precipitate delivery to many hours in difficult births.

It would seem that each case must be considered individually. Some of the normal positions were delivered with difficulty due to a disproportion, while some apparently easy births had an abnormal position which meant that there must have been an abnormal twist of the head during passage through the birth canal.

There were some few babies that showed a hemorrhagic tendency and probably would have bled regardless of the type of delivery.

The time of the onset of *symptoms and signs* varied:

19 showed signs at birth

13 developed signs during the 1st day

12 developed signs during the 2nd day

8 developed on the 3rd day

1 developed on the 4th day

1 developed on the 12th day

The predominating feature was cyanosis.

This was present in 47 cases.

There was convulsive twitching in 16. Increased fontanelle pressure in 17. Spasticity in 9. Flaccidity in 16. Exaggerated cerebellar ataxia in 7. Evidence of hemorrhage elsewhere in 8—

3 of these from the nose

3 in the gastro intestinal tract

2 in the skin

There was extreme jaundice in 3.

Cyanosis in any newborn is always suspicious of intracranial hemorrhage, until proven otherwise. Many of the so-called blue babies formerly signed out as atelectasis have died as the result of a brain hemorrhage. There was atelectasis present in many of these babies. The writer, however, feels that atelectasis as a primary condition is extremely rare. It is usually due to a depression of the respiratory center in the medulla from a general or localized intracranial pressure.

A typical case is illustrated by Baby M.—a full term infant weighing 9 lbs., 2½ ounces. R. O. A. forceps delivery. It was moderately cyanotic at birth. On account of the difficult delivery it was given 20 cc. of mother's blood subcutaneously immediately after birth. The general condition was good for 12 hours. The color, however, was never absolutely normal. At the end of that time it had a severe cyantotic attack from which it rallied in a few minutes. Thereafter it refused to take fluids. The cry was weak and sickly. The cyanotic spells recurred every 15 minutes to ½ hour. There was never any spasticity or any convulsive movements. The fontanelle was soft. Spinal tap gave a blood-stained fluid under normal pressure. The baby died in cyanosis 48 hours after birth.

Autopsy revealed fluid blood and clots in the middle

and posterior fossae, around the right half of the cerebellum and medulla. There were several tears averaging 1 cm. in length in the tentorium on the right side.

The pulse varies from increased rapidity to the slow rate of intracranial pressure.

The respirations are usually disturbed. They may be the panting respirations of atelectasis or extremely slow. There is often Cheyne-Stokes breathing.

The temperature may be subnormal due to a large amount of bleeding or may be raised as the result of inanition caused by the failure to take fluids.

Lumbar Puncture was done on 20 of these babies. Twelve showed blood-stained fluid in which the blood was well mixed and the fluid did not clear. Eight had increased pressure. In some the two findings were combined. Some which did not show blood had an extremely yellow fluid.

Four of the babies which recovered developed a temporary hydrocephalus, non-obstructive in type. This was relieved by daily spinal drainage and did not recur.

The type of lesion responsible for the train of symptoms presented is best described by a review of the autopsy findings. Of the 36 which died, permission for autopsy was granted in 15.

The picture presented was:

Laceration of the tentorium cerebelli with subtentorial hemorrhage in 6.

Laceration of the tentorium with blood in the posterior fossa complicated by lacerations of the medulla in 1.

Laceration of the tentorium—blood in the posterior fossa and hydrocephalus in 1.

The same condition complicated by hemorrhage into the cerebellum in 1.

Blood in the posterior fossa with no sign of any tear in 3.

Diffuse subdural hemorrhage with no evident tears in 2.

Cerebellar hemorrhage with no other lesion in 1.

Nine of the 15 cases showed a ruptured tentorium. These tears varied from one to several—unilateral and bilateral.

Twelve of the cases showed evidence of hemorrhage in the posterior fossa as the source of the trouble. Pressure on the medulla and cerebellum was responsible for the symptoms in these.

There were no signs of fracture of the skull in any.

In four there was a definite atelectasis present.

Of the 3 cases developing following cesarean section:

One had a definite hemorrhagic disease of the newborn with gastro-intestinal hemorrhage, coagulation time of 11 minutes, and hydrocephalus. Following transfusion and repeated spinal drainage the baby recovered.

One woman was allowed to labor several hours, forceps had been attempted, and the section was done only after failure to deliver from below.

The third is very interesting. A mother with mitral stenosis sectioned one month before full term, under local anesthesia. There was never any labor. The baby weighed 5 lbs., 12½ ounces. The condition was good at birth. It needed no artificial resuscitation. Four hours after birth the infant suddenly became cyanotic. Examination showed an unconscious baby, absolutely flaccid. There was deep cyanosis varying with respiration. The respirations were gasping and irregular. The fontanelle was soft. The pupils midwide with no reaction. The breath sounds were clear, with a bronchial pitch over the left chest. The heart was slow and regular in rhythm. The rate varied with respiration. A diagnosis of basilar hemorrhage was made and persisted

in, in spite of the type of delivery. The baby expired 5 hours later. Autopsy revealed some aletlectasis. Upon opening the skull there was no free blood in any of the fossae. There were no tentorial tears. The right half of the cerebellum contained a large recent hemorrhage with considerable destruction of tissue—only a thin layer of cerebellar tissue overlying the blood.

The Prognosis in brain hemorrhage should always be guarded. The prognosis as to life is always uncertain. The question the parents are always interested in, however, is, will it affect the baby later on in life? Time is the only thing that can give the answer to that.

Of the 19 babies which lived it has been possible to follow up 9 of them. Of these—3 at 6 months and 2 at one year appear to be normal. One at 10 months and one at 1 year show normal mentality and development but have one-sided Jacksonian seizures in the extremities. One at 2 months developed epileptic seizures and now at 14 months still has definite epileptic seizures. One at 10 months is well developed nutritionally but has no more mentality or physical development than the average 2 month-old baby. It is just about able to recognize the mother. One was left with a true obstructive hydrocephalus. He had a corpus callosum drainage operation performed at 10 months. When last seen at 22 months, he had recovered from his hydrocephalus, although his head is still large. He had been walking 2 months and had apparently a normal mentality.

Some of the mildest cases at the time of the acute condition give the worst changes later on. One baby, not a part of this series, when seen at 13 months, gave a history of having had cyanosis for one day after birth. He was perfectly well after that, but apparently did not develop as the normal baby should. At the time seen, he was a completely blind, cerebro-spastic idiot.

The Treatment—is mostly symptomatic and palliative. All babies with difficult births should be given 20 cc. of whole blood subcutaneously upon delivery. This is a good prophylactic measure, of course, only in those which have a hemorrhagic tendency. We never know, however, which ones are going to have that tendency.

Where there is any danger of hemorrhage developing the head of the crib should be elevated at least 6 inches to decrease the intracranial pressure. It is a decided mistake to lower the head of the bed, as is often done, after birth, to drain the so-called mucus (which is usually stomach contents).

There must be absolute rest with as little handling as possible. Feeding should be given by gavage if necessary. Oxygen by funnel inhalation or nasal catheter continuously for cyanosis. Fluids in the form of hypodermoclysis may be given if acute inanition is present.

Spinal tap is always indicated, if the baby's condition will permit, either as a diagnostic measure or for the relief of pressure. It is a safe procedure, easily performed.

In hemorrhagic disease there is but one remedy for the bleeding, namely, intravenous blood transfusion.

In Summary:

1. Intracranial hemorrhage in the newborn is frequent enough to be constantly watched for.
2. Difficult or abnormal birth is the predisposing cause. Forceps are only incidental to the difficult delivery.
3. The most common site of the hemorrhage is at the base of the brain.
4. Cyanosis in any newborn is a very suggestive sign.
5. The prognosis should be very guarded as to the ultimate outcome.

180 Sterling Place, Brooklyn.

Dislocation of Cervical Vertebrae*

Case Presentation

DONALD E. MCKENNA, M.D., F.A.C.S.

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This case is presented to emphasize the advantage of early recognition and reduction.

A male, J. G., age six years, was admitted to the Methodist Episcopal Hospital on the Surgical Service of Dr. Henry Graham, twenty-four hours after being struck by an automobile. The chief complaint was of pain on the left side of the skull and neck. Fracture of the skull was excluded, and an anterior dislocation of the first and second on the third, and the fourth on the fifth cervical vertebrae was disclosed. The essential clinical feature was the existence of a left-sided torticollis (wry neck).

On the third day after injury the dislocations were reduced by manipulation without anesthesia. The procedure was as follows. The deformity was exaggerated, for the purpose of unlocking the vertebrae, by lateral flexion of the head and neck to the affected (i.e., left) side. To increase the intervertebral space, traction on the occiput, with counter-traction on the shoulders, produced the desired effect. Forceful lateral flexion to the unaffected (i.e., right) side completed the maneuver. After a series of such manipulations a definite sense of reposition occurred. It could be heard as well as felt.

Immediate x-ray confirmed a reduction of the atlas and axis on the third cervical, but a persistence of the anterior dislocation of the fourth on the fifth. Manipulation was repeated but the procedure modified. The occiput was forced forward until the chin touched the

chest. Extension of the spine with counter-traction on the shoulders followed, and rather forcible hyperextension concluded the effort. On this occasion the sense of reposition was felt but not heard. Re-x-ray confirmed complete reduction. The parts were immobilized in a plaster of Paris collar with the cervical spine in hyperextension. Support was continued for six weeks and physical therapy followed its removal.

The patient now has—three months after injury—restored symmetry, and free motion of the cervical spine in all directions without muscle spasm.

Dislocations of the cervical vertebrae are not uncommon, and are not necessarily associated with paralysis. They can occur from any sudden, unpremeditated jerk of the head. Diving in shallow water is a frequent cause. Recently, the phenomenon was observed in an adolescent with a juvenile propensity for somersaulting. X-rays are not always conclusive. The deformity is usually a torticollis, hence a suddenly occurring wry neck with a history of trauma, in an otherwise healthy individual, should arouse one's suspicion of this lesion. The sooner a dislocation is reduced, the better the prognosis. The manipulation may vary, but the essential features are unlocking of the vertebrae by increasing the deformity, followed by extension and derotation of the spine. Immobilization must follow. After the tenth day reduction is most difficult, even under anesthesia. In three to six weeks the displaced vertebrae become so fixed that the task is almost impossible.

80 Hanson Place, Brooklyn.

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Hemochromatosis*

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New York, N. Y.

Case Report, M. D. Male, white, married, age 45, occupation electrician.

Admitted to service of Dr. Cross, November 24, 1930.

On admission at 10:30 A. M. patient was in coma. History obtained from wife. Patient was apparently healthy and active until two weeks before admission. In March, 1930, patient passed a physical examination for life insurance. Family has noticed no change in patient's color.

P. I. Two weeks before admission began to feel weak but continued work. Nine days ago consulted physician who had his urine examined and found sugar. One week ago had to go to bed due to weakness. November 24th patient could not be roused from sleep in A. M., was breathing peculiarly and was brought to hospital in ambulance.

P. X. Patient in extremis, breathing once in 20-30 seconds, pulse imperceptible, apex beat not audible, cyanotic, extremities cold, acetone odor to breath. Catheterized specimen of urine contained 5 per cent sugar.

Diagnosis—Diabetic coma.

Prognosis—Quickly fatal.

Patient expired at 11:50 A. M., 1 hour 20 minutes after admission.

ABSTRACT OF POST-MORTEM

Adult male, 5 ft., 9 in. tall, weighs 130 lbs., emaciated, skin pigmented, lead color.

Heart muscle is slightly pigmented, heart otherwise negative. Liver is enlarged, cirrhotic and bronze color. Pancreas is greatly enlarged, weighs 200 gms. and is a deep bronze color. There are many dark brown lymph nodes in the mesentery. The other organs are not remarkable. On microscopic examination, the liver shows portal cirrhosis with intense pigmentation. Pancreas is deeply pigmented. Some of the islands show fibrosis and round cell infiltration, others are surrounded and choked by pigment. Sections of skin show pigment in the corium. By micro-chemical tests, the pigment is proved to be hemosiderin. There is also a considerable amount of hemofuscin.

Blood taken at post-mortem 3 hours after death contained 750 mgm. of sugar.

Diagnosis: Hemochromatosis with diabetes.

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McCrae defines hemochromatosis as a "disorder of metabolism characterized by deposition of an iron-containing pigment in the glandular organs, increase in normal pigmentation, progressive sclerosis of various organs and in a large proportion of cases, diabetes."

Von Recklinghausen first described and named the disease. At about the same time, Hanot reported a similar disease which he called "bronze diabetes."

Clinically there are two groups of cases, the non-diabetic and the diabetic, the latter being the larger group. In the former, the patients die of hepatic insufficiency or some intercurrent infection. In the latter, the more interesting group, a rapidly progressive diabetes develops.

At autopsy, the most striking feature is the bronze color of heart muscle, liver, pancreas, spleen and lymph-nodes. The skin may be dark brown, leaden or blue black. The pigment is hemosiderin, an iron-containing derivative of hemoglobin. There is also cirrhosis of the

liver and, in the diabetic cases, severe injury to the islands of Langerhans in the pancreas.

Pathogenesis—There is an abnormal accumulation of iron in the body deposited as hemosiderin. In health, the entire body contains about 3 gm. of iron. In hemochromatosis, 38 gm. has been found in the liver alone. Rous & Oliver caused hemochromatosis in animals by repeated transfusions. However, there is no clinical evidence of blood destruction in humans. The disease occurs almost exclusively in middle-aged males. Mallory reports 10 cases with increased amounts of copper in the organs. He produced hemochromatosis in animals by feeding copper. These experiments were confirmed by Hall & Butt. Many of the patients have been workers in copper.

Differential diagnosis may be aided by finding iron-containing epithelium in the urine or by biopsy of the skin.

1159 Dean Street, Brooklyn.

Maternal Mortality at the Methodist Episcopal Hospital*

HARRY W. MAYES, A.M., M.D.
New York, N. Y.

For every 1,000 babies born in the United States during 1929, 7 mothers lost their lives and two-fifths of these deaths were due to puerperal sepsis. In New York City there were 668 maternal deaths in 1930 and, of these, 114 were due to sepsis.

At the Methodist Episcopal Hospital we have endeavored to reduce this high death rate by the use of a vaginal antiseptic in the birth canal during labor and at the time of delivery. During the year 1930 we had 1,977 deliveries with 2 deaths following the delivery of a viable child. One of these was delivered in 1929 and died from an embolus; the other, from a ruptured uterus. Thus we have a death rate for the year of .5 per 1,000 live births; 14 times better than the United States and 7 times better than New York City.

During the last 11 years we have had 108 maternal deaths in 15,647 deliveries. In making a study of the development of the mercurochrome technic, which has been in vogue at the hospital since 1925, we have divided the cases into 3 groups of about 5,000 each. The first period, from 1919 through 1924 inclusive, was when no vaginal antiseptic was used. The second group, from 1925 through 1927, was during the experimental stage with mercurochrome, and the last group, from 1928 to August 1, 1930, was with the present technic.

There were 54 maternal deaths in the first group, 32 in the second, and 22 in the third, making a total of 108. There was a mortality rate from cesarean sections of 7.1 per cent in the first group, 2.2 per cent in the second, and 2.8 per cent in the third. Exclusive of cesarean section, if we consider only the viable vaginal deliveries, there were 28 deaths in the first group, 7 in the second, and 7 in the third.

Puerperal Sepsis

Following viable vaginal deliveries there were 6 maternal deaths from puerperal sepsis in the first group, 8 in the second, and only 1 in the third. The large number of septic deaths in the second period may be ac-

counted for partly by the fact that our technic was faulty, but it is interesting to note that 1 patient had no mercurochrome, 1 only at delivery, and 1 was infected before admission, while there were 4 maternal deaths during the epidemic of puerperal sepsis in the spring of 1927.

Following cesarean section there were 9 deaths from puerperal sepsis; 7 in the first series, 1 in the second, and 1 in the third.

Eclampsia and toxemia accounted for 14 deaths in the first series, 3 in the second, and 4 in the last. Patients with toxemia and eclampsia have a lowered resistance following delivery and they are very susceptible to infection. This is borne out by the fact that during the period from 1919 through 1924, inclusive, there were 4 deaths from puerperal sepsis in which there was either a toxemia or an eclampsia, making a total of 18 deaths in which this condition played a part, while following the use of mercurochrome, toxemia and eclampsia were not a contributing factor in the septic deaths.

On the second obstetrical service there were 2,056 vaginal examinations during the year 1930, or an average of 2.1 per patient, while on the first obstetrical service there were 407 vaginal examinations, or 1 vaginal examination for every 2½ patients. The vaginal examinations had no effect on the maternal deaths. The gross morbidity, including cesarean sections, was the same on the two services in spite of the fact that there were 5 times as many vaginal examinations on the second as on the first service. If we leave out cesarean sections, the morbidity was .8 per cent higher on the second obstetrical service.

After a careful study of the use of mercurochrome in obstetrics and after using various methods of instillation, which was done during the developmental stage of the mercurochrome technic, we feel justified in making the statement that mercurochrome should be used as a vaginal antiseptic during every labor and before every delivery and by this means many mothers who are now being lost could be saved to care for their children.

494 First Street, Brooklyn.

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The Diagnosis of Acute Hematogenous Osteomyelitis*

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If the diagnosis of acute hematogenous osteomyelitis were made sufficiently early, and the proper treatment promptly instituted, the mortality would be reduced to a minimum.

But, unfortunately, accurate diagnosis and operation are delayed in the large majority of cases and there follows a prolonged period of illness, extensive destruction of bone and often a long series of operations.

We all recognize the fact that acute hematogenous osteomyelitis can be so variable in its early symptoms and manifestations as to make prompt diagnosis difficult, nevertheless if we should bear in mind a few of the more salient features of this disease, its early recognition would be much more probable.

1st. Though it may occur at any age, osteomyelitis is a disease primarily of childhood and adolescence; most cases occur between 5-15 years of age. Boys are affected more frequently than girls.

2nd. The infection of bone occurs as the local manifestation of an active bacteremia. The staphylococcus and the streptococcus are the most frequent offending microorganisms. The staphylococci gain entrance to the blood stream through cutaneous abrasions or lacerations, often minute in size, or in the course of such infections as furuncles, carbuncles, impetigo or other common skin lesions. Streptococci invade most commonly through infected tonsils and sinuses or an abscessed ear. Osteomyelitis is frequently secondary to the exanthemata, scarlet fever and measles particularly.

3rd. Whereas it was formerly considered that some injury played an important part in the etiology of acute osteomyelitis, it is more likely that trauma does little in the way of localizing the osseous infection.

4th. The distribution of the lesion is quite characteristic. It occurs almost invariably at the epiphyseal end of the shaft of the long bones, and particularly in the bones of the lower extremity, for the femur or the tibia

is the site of infection in 75 per cent of cases. But, it must be remembered, no bone in the body is exempt and lesions are frequently multiple.

The typical case of acute hematogenous osteomyelitis has a sudden onset with chills and fever, rapidly progressing toxemia accompanied by vomiting, headaches, rapid pulse and prostration. At the site of the lesion there is a pain which begins suddenly, is persistent, and continues to increase in intensity. In the early stage there is little or no external manifestation of the local acute inflammation, but pressure over the lesion causes severe pain. The pain and tenderness is near the joint but not in it; marked leucocytosis is characteristic; high poly count is the rule. The X-ray gives us no help in diagnosis of the bone pathology in the early stage.

The conditions with which acute hematogenous osteomyelitis are most frequently confused and from which they must be accurately differentiated are acute rheumatic fever and acute arthritis. Gentle motion of the joint will be permitted in osteomyelitis but will cause severe pain in joint infections. And conversely, the metaphysis is acutely tender in osteomyelitis *only*, and pressure on the shaft, even well below the lesion, will provoke acute pain in the affected bone.

Acute osteomyelitis is essentially an acute surgical condition. Its early recognition and diagnosis are as important as that of a surgical abdomen. There is probably no other disease in which mistaken diagnoses are so frequently made by both physician and surgeon and in which the institution of the proper treatment is so consistently delayed. Prompt operation is imperative in order to check the progress of the acute infection. Delayed diagnosis jeopardizes life and favors extensive bone destruction. Errors of commission can be more easily condoned than errors of omission; early diagnosis being so essential and late diagnosis so disastrous, I would urge that cases of even doubtful diagnosis be submitted to exploratory operation.

857 President Street, Brooklyn.

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Volvulus of the Caecum*

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A 30 year old, married, white female was admitted to the First Surgical Service of the Methodist Episcopal Hospital on January 26, 1930, suffering with abdominal pain and vomiting. Except for constipation, her past history was irrelevant.

The night before, after two days of constipation, she took a phenolphthalein tablet. The next morning, her bowels moved well. At 6 that evening, she was seized with sudden, sharp, cramplike pain, and vomiting. Two enemas failed to relieve. At 11 P. M., she entered the Hospital, and shortly after vomited twice.

I first saw her one hour later when she was writhing with paroxysmal abdominal pain. Inspection showed an absence of umbilicus, and, high in the epigastrium, a flat, stellate scar larger than a silver

dollar—evidently the result of a congenital deformity. To the left of the midline, there was an elongated swelling which was soft to the touch, gave a tympanic percussion note, and seemed to be distended large gut. Over this were heard the tinkling sounds frequently found in cases of obstruction. There were slight general tenderness and tenseness of the muscles but no true rigidity. Rectal and vaginal examinations were negative. In view of the history, the absence of signs of peritoneal inflammation and the physical findings, a diagnosis of intestinal obstruction was made.

Under spinal analgesia with supplemental gas and ether, and through a 7" median incision, a mass of twisted and partially strangulated small and large gut was exposed. A firm, constricting band was found on examination to be a portion of mesentery

* Read before the Associated Physicians of Long Island, January 31, 1931.

and led to the solution of the problem—a volvulus of the caecum. It, and the proximal portions of the colon and ileum, were twisted one full turn in a clockwise direction, assuming the clock to have been lying on the abdomen face up.

When the torsion was relieved, the transverse colon was found partially obstructed by some adhesive bands which were severed. The caecum was fixed to the parietal wall in the right flank, and the ascending and transverse colon to the anterior abdominal wall. Several through and through mattress sutures of Pagenstecher were used and tied over gauze bolsters externally. The wound was closed in layers without drainage. For several days, she had some pain from distention which was combated with morphine, pituitrin, enemas, and enemas.

The day after, she vomited once. The temperature rose to 102.2° but was normal in four days. The wound was healed by first intention on the eighth day when all sutures were removed. She was allowed out of bed on the 17th and home on the 20th day. She appeared at the follow-up clinic at the third and ninth month when she complained of some mild attacks of pain and nausea. Her general condition was excellent and the wound firm.

Volvulus of the caecum is usually a sequel to a

congenital failure of the organ to fuse following its migration across and down the right side of the abdomen. It carries with it its mesentery which is continuous with that of the small intestine. Occasionally it occurs where the caecum has become mobile as a result of traction from distention, constipation, over-eating, enteroptosis, etc. Increased intra-abdominal pressure from lifting, injury and violent exertion are the exciting causes that precipitate the attack, although it may and has occurred at rest in bed. 70 per cent of the cases are males.

The symptoms are those of intestinal obstruction. A pre-operative diagnosis is seldom made. The treatment is surgical and ranges from simple detorsion to resection. All reported unoperated cases died. In a series where complete resection was practised, 47 percent recovered. Following simple detorsion, 64 per cent recovered. Without detorsion, all died. Where enterostomy of different types was used, all died. Cases of recurrence have been reported.

The consensus of opinion as to procedure seems to be: first, where the gut is viable, detorsion and fixation; second, where there is gangrene, complete resection if warranted, and, if not, delivery of the mass to be followed by resection when and if the patient's condition warrants.

543 Third Street, Brooklyn.

Prevalent Hypothyroid Manifestations*

IRVING L. CABOT, M.D.
New York, N. Y.

In reviewing a few of my metabolism readings for the past six months, it seems of interest to group the cases which had a rate of minus twelve or less and get a résumé of the types of patients from whom we might expect to obtain low readings and a therapeutic evidence of their hypothyroid manifestations.

Out of twenty-six cases, with readings of minus twelve to minus forty-four, there were five distinct groups.

In Group I were those with very marked myxedematous symptoms, some chronic and some acute. Among the acute were two men, twenty-three and thirty-two years respectively, with rates of minus twenty-one and twenty. One had a history of three years' and the other of one year's duration without knowledge of infection or other element to induce it. The one showed a rough, dry skin with non-pitting edema, puffy face, very sluggish reactions, both mental and physical, sleepy, tiring easily, hypotension of eighty to one hundred systolic and secondary anemia. He showed a very marked response in symptoms to thyroid medication after two weeks, with a slower response to relief of the hypotension and secondary anemia. The other man had had some thyroid medication rather constantly for three years and with increase of the doses improved generally in a month's time.

Among the more chronic members of this group were middle-aged women, two of whose cases I will note; one with a rate of minus forty-four and one with a rate of minus eighteen. They both had histories of myxedematous symptoms for years, some menstrual disorders with a tendency to amenorrhea, sallow, dry skin, lack of energy, palpitation on exercise, and breathlessness. They

were mentally alert, with a tendency to nervous irritability and were overweight and constipated. Both had at times had some thyroid medication which was not checked by basal metabolism readings. I have been giving them thyroid, with great improvement in their symptoms, and further checks on their B. M. readings have corresponded to the relief of their symptoms. One of them had children, the female of whom had symptoms very similar to those of the mother. This condition is known to be familial in many cases and more common in women.

Group II. Those who developed a hypothyroid condition at the menopause and whose metabolic rates were minus thirteen to thirty-four. Some had taken ovarian extract in some form with only partial relief of symptoms, but when treated with thyroid extract they improved markedly.

Group III. Cases who developed myxedema postpartum. I have two cases, twenty-three and thirty-four years, whom I saw about three months postpartum, with readings of minus eighteen and minus thirty-eight respectively. They had marked loss of energy, were very sleepy—so much so, that they went to sleep whenever they sat down, regardless of their interest in conversation or environment. One had a slight gain in weight, the other none. Their skin was not absolutely dry, though more so than usual and there was little gain in weight. Both had definite enlargement of their thyroid glands, which started during pregnancy. Both cases showed marked improvement after treatment was started with the desiccated gland extract and sodium iodid.

Group IV was a series of eight young women, nineteen to thirty years, all of whom had moderate enlarge-

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ment of the thyroid. They were under weight, nervous, sensitive to cold, lacking in endurance and inclined to dyspnea and faintness. The pulse was more rapid than usual, increasing rapidly with the least nervous stimulation. Their hands were cold and moist but the skin elsewhere was dry. They had evident colloid goitres, with decreased secretion of the toxin, and would no doubt have shown marked improvement on iodid alone. They were given, however, sodium iodid and small doses of thyroid $\frac{1}{2}$ to 2 grains daily, with subsequent checks on basal readings and symptoms. All showed definite improvement by the tests and improvement of symptoms with gain in weight. In connection with these I mention one girl of nineteen who gave a history of mumps two years previously and it seemed probable that her symptoms dated from this infection. We know that myxedematous symptoms may follow infection of any type.

Group V was a very common group of postoperative cases of exophthalmic goitre who had evidences of myxedema. We see an increasingly smaller number due to better operative technique and judgment in the amount of tissue to be removed.

In Summary: I wish to call attention in our general examination of patients, to two groups. First to the young adult group, well past adolescence, with small goitres, nervous, overweight, with cold, moist hands and a general lack of endurance. These will benefit by iodids plus small doses of thyroid. Second: The group of women moderately overweight, with flabby tissues, lack of endurance, mentally alert, and eager to be very active, nervous, and often with some intestinal stasis. Thyroid in carefully regulated doses over months or years is advantageous in these cases.

860 Union Street, Brooklyn.

Roentgen Diagnosis of Gall Bladder Pathology*

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The brief program time allotted to this subject necessitates dealing with only the high lights of a procedure which in the past five years has made a marked contribution in both medical and surgical diagnosis. The direct method only will be considered—sometimes called the Graham-Cole test; and this can be further modified by considering only the oral method. While the intravenous technique has its staunch adherents, we feel that any procedure which is only a complement to a complete diagnosis should in no wise jeopardize the welfare of the patient. Some of the reactions seen, or those described by others, have made us reluctant to adopt this as a regular procedure. We shall continue to follow the oral method with its minimum reaction and satisfactory results, until improvements in intravenous technique are advanced.

We will concern ourselves but little with the chemistry of the dye used. Suffice to say it is an I salt, its full chemical identity being tetra-iodo-phenolphthalein. It is produced in the form of an emulsion, grape-flavored, to which water, grape juice or sarsaparilla is added, and then ingested.

Certain factors, however, are essential—definite premises, so to speak—before the results of the test can be considered diagnostic. First, and in many cases foremost, is the complete cooperation on the part of the patient. All the dye must be consumed and in the event of vomiting taking place within the first hour, this must be reported. Frequent evacuations, sometimes almost approaching a diarrhoea, may have a bearing on the amount of dye retained. This is readily learned by taking an exposure, and actually seeing the quantity of dye left in the intestinal tract. The quality of the dye, as its chemistry, need not concern us in this dissertation.

Other factors which we may consider intrinsic, and not controllable, are:

- Gastro-intestinal lesions which would delay proper absorption of the dye (viz., cancer, abnormal gastric re-

tention, ulcer, or inflammatory conditions in small intestine and colon). Erroneous gall-bladder conclusions, drawn in the existence of such pathology, would in all likelihood be discarded through other positive findings.

- Liver function must be preserved to approximately 50%.

- The gall-bladder wall must be sufficiently free from pathological changes to be able to concentrate the dye.

- The biliary tract must be patent in its entirety down to and including the sphincter of Odi.

Technique: With no preparation, a control exposure is taken of the gall-bladder area. This is mainly to rule out shadows which small, calcified stones may cast, and which might be obliterated by the entrance of dye into the viscus. This also helps to rule out shadows which might be confused with the gall-bladder—viz., sectional view of the duodenum, pyloric end of stomach, or accessory lobe of liver. The evening before the test, the patient is given a prescri' supper of light diet at seven o'clock. At nine o'clock the dye is given. After this, no food is allowed, altho. h water may be drunk freely. Exposures on a food-free stomach are then made at twelve and seventeen hours after ingestion of dye. Immediately following the seventeenth hour study, a full, fatty meal is given to bring about physiological emptying of the viscus. Another exposure is made one hour after the meal is completed.

The final consideration is that of interpretation. It is to be remembered that this is a physiological or functional test. With this in mind, it is natural to expect the gall-bladder to be filled on the twelfth and seventeenth hour exposures. Then, after the fatty meal (nineteenth hour exposure), the size of the viscus should be diminished markedly ($\frac{1}{3}$ to $\frac{1}{4}$) or gone entirely. Such a sequence constitutes a normal response. Other factors to be considered in the event of the gall-bladder casting a shadow are:

(Concluded on page 101)

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Oysters*

Their Physiology — Their Nutritional Value

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Introduction:—Though oysters have been enjoyed for the lifetime of the race, nevertheless, it is only within comparatively recent times that much has been known about them. The problems of their physiology have, of late, attracted many scientists with the result of an accumulation of a goodly share of interesting information, though the subject is far from exhausted at the present time. Not only the relation of the oyster to itself and its own physiology and economy but the effect it has on its human consumers has come to the fore with unexpected and to some, astounding results.

Not very long ago liver as a food was considered a

figure 1). "Oysters are to iodine what cod-liver oil is to vitamin D."

The value and necessity of iodine need hardly be emphasized in a medical journal. It is, however, worth pointing out that the development of the inland market for sea foods through new processes of quick freezing may do much to carry iodine to the goiter belts.

Oyster protein contains all the essential amino-acids¹ and can therefore be safely used as a substitute for meat protein. For a protein food they contain a large amount of carbohydrate, about 4% by weight being glycogen.² Oysters are a poor source of fat.³

Vitamins A,⁴ B,¹¹ C⁶ and D⁵ have all been found in oysters in large amounts and since oysters are consumed raw they may be considered a particularly good source of those fractions which are readily destroyed by heat.

FIGURE I
Iodine Content of Various Foods

Product	Iodine parts per billion
oysters	1,160
clams	1,370
crabs	180
lobster	1,380
shrimp	450
beef	5
veal	22
eggs	27
milk	5
wheat	5
oranges	15
lemons	106
lettuce	27
bluefish	250
cod	240
salmon (canned)	250
mackerel (salted)	400
dried sea weed	900,000

United States Bureau of Fisheries Document No. 1000, 1926.

most plebeian dish and in many places was given away and not infrequently found the dog as its final consumer. But a few spectacular clinical studies and a lot of careful laboratory investigations have entirely changed the social standing of liver; and accomplished it in a surprisingly short time.

Are oysters headed in the same direction? They have been attracting the attention of many scientists of late and some very interesting information is forthcoming. Perhaps they may fall from their pedestal of an epicurean delicacy and become a regular item in the dietary of "the common man".

FOOD VALUE:—As a food, oysters present several interesting features. Instead of roaming over the land to get a variety of food they stay firmly attached to one spot and let the variety flow to them, suspended and dissolved in that mother of all life, the sea, and out of that multitude of elements that is brought to them they manage to retain and assimilate a great number. The mineral content of oysters is high and abundant in many of those elements essential for human physiology. Calcium and phosphorus are present.³ Iron, copper and manganese² are there in large amounts—their value will be considered in greater detail below. Oysters are one of the best sources of iodine^{2, 8} and contain about 200 times as much iodine as milk, eggs or beefsteak. (See

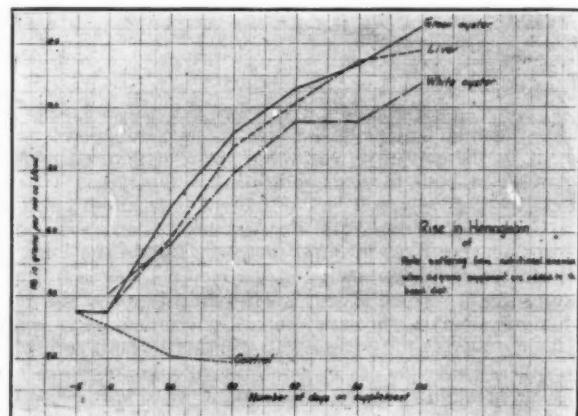


Fig. 2—Rise in Hemoglobin of Rats

It is not surprising that oysters contain a good supply of the vitamins. It is well established that the animal life is dependent on the vegetable world for its supply of vitamins (except possibly vitamin D). Oysters feed largely upon diatoms and the minute organisms to which has been traced the origin of vitamin A. Thus this food is similar to that of the cod which concentrates this vitamin so abundantly in its liver and it is not surprising that the oyster also can store the vitamins in its tissues.

ANEMIA:—Of special interest is the effect of oysters on hemoglobin building, which Drs. Dorothy Whipple and Opal Wolf are investigating in the Pease Laboratories.[†]

Green oysters have long been the despair of oyster growers along the Atlantic coast, but before long the tables may be turned and they may become more sought after than the usual white variety.

This green color is associated with an increased copper content. At the spring meeting of the Society of Biological Chemists in 1928, Hart and Steenbock⁷ came

* An address delivered at the annual meeting of the Associated Physicians of Long Island, January 31, 1931.

† A paper on the value of oysters in nutritional anemia is in preparation at the present time.

out with their notable paper on the value of copper in hemoglobin building. The idea at once developed, would oysters, and especially green oysters, be of value in anemia? We set out to find out in my laboratory.

The work has taken time and is still in progress, but it has gone far enough to begin to show which way the wind is blowing.

Drs. Whipple and Wolf have succeeded in developing



Fig. 3—Comparison Rats fed diets as indicated.

Rat 364
Milk Control Rat 362
Milk + 0.5 g. green oyster daily.
Comparison litter mates fed as indicated.

a method of getting anemic rats at will. This preliminary work took some time because they soon found that the methods of other investigators did not work in their hands, due probably to unmentioned but important environmental differences. A stock colony of rats is fed a diet consisting of $\frac{2}{3}$ whole wheat flour and $\frac{1}{3}$ powdered whole milk supplemented by a small piece of fresh meat and lettuce daily. The young produced by this colony are not on a diet of fresh whole milk at weaning and within 2 to 3 weeks their hemoglobin drops to 2 to 3 grams per 100 c.c. blood (i.e., 12-18%). They are then ready to start on an experiment.

The first investigation was with dried material. Fresh normal colored oysters were received, shucked, weighed and dried at 80-90 deg. Cent. to constant weight, and ground to a fine powder. The same procedure was used with very green oysters from Bridgeport harbor. For comparison, fresh beef liver was prepared in the same way.

The animals were selected by litters in order exactly to control all factors of heredity and age. When the hemoglobins had fallen to 3 grams per 100 c.c. or less, the litter was divided into four groups of equal numbers, if possible. One group was kept as control and received nothing but milk. Each of the others received 0.5 grams of one of the following: liver, white oyster and green oyster. Hemoglobins and weights were taken at weekly intervals thereafter.

The results are given in Figure No. 2, which is a composite of all the animals used in this experiment. The curve represents 28 controls, 13 green oyster, 8 white oyster and 10 liver. All the controls died without exception and at autopsy showed a typical picture of extreme anemia, very pale mucous membranes, ivory colored lungs, pale liver and spleen, dilated heart and hyperplastic bone marrow.

The experimental animals grew, were lively and to all appearances seemed strong and healthy. There was a marked difference in the color of the ears, nose, feet and eyes between the experimental and control animals which does not show in the pictures. (See Figure 3.)

The difference between the various supplements is given on the curve. It is to be noted that green oysters produce a more rapid response than liver and that throughout the duration of the experiment green oysters are just a little higher than liver. It is doubtful if this difference is significant. In this series, the hemoglobin level at which the animals started averaged identical for liver and green oyster. This fact, though an accident, makes the comparison interesting.

Another experiment is in progress using fresh oyster

in place of the dried material. This is not yet ready to report upon but it can be said that the hemoglobin values are rising rapidly and the animals growing well. (See Figure 4.) No marked difference in the hemoglobin rise between fresh and dried has so far been detected but it does seem that growth is more rapid on the fresh. The sleekness of the fur is decidedly better on the fresh oyster. No statistical analysis has yet been made, hence no comparison between the various fresh supplements can be offered at present.

A great many problems present themselves for further work in connection with this anemia study which Drs. Whipple and Wolf hope to work on in the near future. Immediately they intend to study the ash and get the relation between the mineral complex and any possible organic substance which may be a factor.

For a thorough appreciation of the possible value of oysters in the human dietary a knowledge of their physiology is of great value. A brief outline of a few of the outstanding points may therefore not be out of place here.

LIFE HISTORY:—The oyster begins life in May or June when spawn is ejected into the water. The English oyster is hermaphroditic but in the American species the sexes are separate and male and female spawn are produced by different adults. Eggs and sperm unite immediately after the spawn is expelled and the zygote begins to divide and grow. It sinks to the bottom where it remains about six hours. It then develops its feeble powers of locomotion, rises to the surface and takes its place with the plankton. Its chief means of locomotion are tides, winds and currents, its own feeble powers being negligible in comparison with these strong forces.

At about the age of 24 hours the young larva begins to secrete lime salts and forms a thin delicate shell. This covering, however, is not sufficient to protect it from its hordes of enemies and many millions meet an untimely death at the hands of larger marine animals which feed on the unattached and floating life of the sea.

After two to three weeks of migratory life the oyster sets. It sinks to the bottom and attaches itself to whatever hard and solid structure is available. Old oyster shells are very acceptable but muddy bottoms spell its doom. The young spat remains in the place where it set and feeds vigorously all summer and fall on the abundant supply of plankton in the warm waters, building sufficient reserve material to carry it over the coming winter. As cold weather approaches the oyster feeds



Fig. 4—Comparison Rats fed diets as indicated.

Rat 445
Milk Control Rat 443
Milk + 20 grams fresh oyster daily.
Comparison litter mates fed as indicated.

less vigorously and about December, when the temperature of the water gets down to 41 deg. Fahr., the shell closes up tightly and the oyster hibernates for the winter. During the entire period of cold weather the shell only opens at rare intervals for brief periods to eject accumulated waste products.

In the spring, the water warms up and the oyster again begins to feed. In one year it is sexually mature and spawns its first spring. However, the oyster is too small at this time to have much market value. At the

end of 4-5 years it has reached sufficient size to be a useful commodity.

GENERAL ANATOMY:—Figure 5 gives a picture of the general arrangement of the organs of the oyster.

The fundamental principles of physiology hold for all forms of life but the details are so vastly different that sometimes one forgets that mollusks and mammals are both animals, yet sometimes an attribute of a special type of cell is brought out so clearly in some lower form that renewed study of the same type of cell in the more

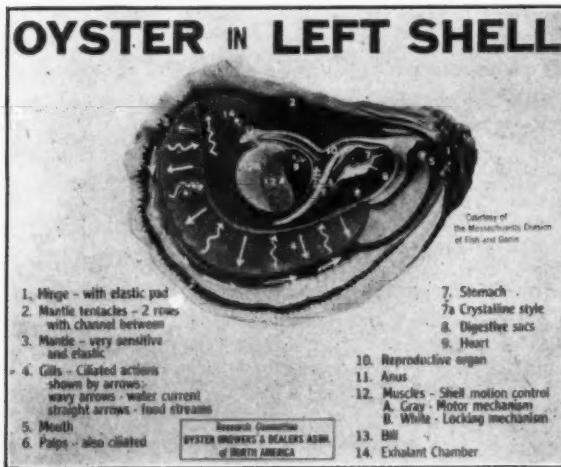


Fig. 5.—Diagram of Oyster.

complicated animals shows it to possess the same function, hitherto masked by the more involved physiology.

An excellent example of this is to be found in the muscle of the oyster. The muscle is composed of two parts, the large round part being made up of striated fibers. There is nothing unusual about the large motor muscle; it acts as all striated muscle throughout the animal kingdom. Bayliss⁸ has determined that it takes a tension equivalent to 2,400 grams per square centimeter to close the shells against the elastic cushion which forces them open. But the interesting point is that the oyster can keep its shells closed for 20-30 days without evidence of fatigue. Obviously this would consume a tremendous amount of energy if accomplished by the ordinarily accepted theories of muscular contraction, an amount of energy which obviously the oyster does not have. The explanation for this paradox is to be found in the small gray smooth muscle which possesses a "catch mechanism." In its contraction it follows, as it were, that of the large motor muscle and fixes the whole system at the point where it stops. The large muscle brings the shells together quickly for a moment, the smaller one holds them in position.

If the catch muscle is removed, the motor muscle can be excited to contraction and keeps its shell closed as long as the stimulation lasts but as soon as this ceases, the elastic hinge causes them to open again. If the catch muscle is cut through while the shell is closed the other muscle is unable to keep it closed, whereas if the motor muscle is divided, the shell remains closed.

If the nerves from the visceral ganglion be cut through while the shell is open, stimulation of the smooth ends of the nerves will produce contraction but no maintenance beyond duration of the stimuli. On the other hand if these nerves be cut while the catch mechanism is at work, the shells being closed, there is no relaxation nor can stimulation of the nerves remove the catch.

The catch muscle remains permanently at the length it had at the moment when the nerves were cut. However, the nerve cords, one on each side, which connect the visceral ganglion with the cerebral mass, control the catch mechanism. Stimulation of the right cord causes inhibition so that the shell opens, stimulation of the left is excitatory so that the shells stay permanently closed.

As to the actual process, only hypothetical suggestions can be made. The state of tension into which a skeletal muscle of the vertebrates is put on stimulation passes off automatically when the stimulation is reduced, whatever may be the cause of the increased tension; whether or not it be the setting free of some substance which increases surface energy it disappears again spontaneously under usual conditions. Smooth muscle has permanent tone which is the same type of reaction as this catch mechanism. It might be explained by supposing that the internal changes in the muscle cell, which result in the increased tension, are prevented from disappearing. But at all events the oyster shows the phenomenon so spectacularly that one cannot help but be impressed by it and thus look for an explanation which, when found, will be of interest and value for all types of smooth muscle which exhibit tone.

FOOD, FEEDING AND DIGESTION:—Feeding in marine animals like the oyster consists in allowing the sea water to pass through the digestive channels.¹⁰ During this course, food is extracted from the water and useless material rejected. There is no attractive force by which the oyster can obtain food elements in its vicinity. What it gets is a pure matter of chance. Therefore, whatever is in the water constitutes the food of the oyster; it consists largely of diatoms and small plant forms present in the plankton.

The only selective power which the oyster has is one of size. The water passes over the gills where it comes in contact with the rapidly beating cilia of the gill membrane. By an elaborate system involving changes in velocity, the large particles are thrown down and driven out along with the excess water, while the smaller particles are carried forward toward the mouth by the ciliary currents. From the mouth the stream passes through the esophagus into the stomach.

Digestion and assimilation is an entirely different process in the oyster from that in vertebrates.⁹ Connected with the stomach are two diverticula presenting a comparatively large absorbing surface. The epithelial cells lining these diverticula ingest soluble food elements and tiny food particles, digest them intracellularly and store them in large vacuoles from which they are picked up by phagocytes and carried to other parts of the body. These digestive diverticula absorb and digest intracellularly; there is no evidence of any secretion from them. In addition to these diverticula the digestive tract contains a style sac with its contained style.⁹ This is still a controversial question, but probably the style is formed by secretions from the numerous mucous glands lining the wall of the sac. It consists of a slender, tapered, semitransparent rod 1 to 2 inches long. It is kept rotating by the ciliary action of the cells lining the sac. The head of the style projects up into the stomach and by its motion helps to mix the stomach contents. There are no muscle fibers present in the entire digestive tract so that all the mixing and currents are produced by ciliary activity. The style has another function. In it are the only extracellular enzymes present in the digestive tract. There are two amylolytic enzymes present in the head of the style, one which digests starch, the other glycogen. Both of these are well developed and most of the splitting of starch and glycogen takes place in the stomach. The material so digested is absorbed

by the cells of the digestive diverticula and there further split into the monosaccharides.

Except for the enzymes present in the style there are no secretions or digestive aids present in the digestive tract. There is no proteolytic or fat digestion in the gut whatever. Throughout the entire animal, and particularly abundant in the gut, are large phagocytes. These cells have the power of ingesting food particles and digesting them intracellularly. The only digestion of fat and protein in the oyster is accomplished within these phagocytes.

Thus food utilization in the oyster consists of feeding, in which the only selection is in size of particles, next, assimilation into the cells of either the phagocytes or the epithelial cells of the digestive diverticula, and then finally, of digestion within these cells. The oyster is particularly well adapted for the utilization of carbohydrates and very poorly equipped to take care of protein or fat. It is therefore not surprising that food material is stored in the form of glycogen instead of fat. The "fat" oyster is one with a large supply of the animal starch, glycogen.

Oysters vary a great deal in appearance in different locations. In some places a distinct greenish color is to be seen. For many years this observation was made and it was assumed that all "green oysters" were of the same type. This was due to the fact that the same individual seldom saw both kinds and the descriptions were not very accurate. Now it is well known that greening in oysters is of two entirely different kinds. The greatly sought after Marennes green oysters of France are grown where a certain green diatom abounds. The oyster feeds on this diatom and becomes colored with its pigment. The color is a dark blue green, very different from the American green oyster, which is a light grass green color. The American green oyster is found in certain definite locations along our coasts. The color is associated with an increase in metals, especially copper. There have been a great many theories as to why oysters in certain places have the ability to concentrate the metals in sea water to a greater extent than elsewhere. To date no explanation is satisfactory. One of the early lines of attack was to analyze the water and attempt to correlate it with the pigment. The effort failed, however. Normal colored oysters are found in waters grossly polluted with trade wastes and, conversely, green ones in uncontaminated waters. Temperatures, salinities, hydrogen ion concentration, dissolved oxygen and a host of other environmental factors have been exhaustively studied. The problem has also been attacked from the point of view of the oyster instead of its environment; respiratory rates, ciliary activity, etc., have all been gone into and while much of great interest has come out of it we are still at a loss to give an adequate explanation. Probably the most fruitful line of attack right now is a study of the effect of the type of food on the physiological processes. The oyster is adapted to utilize carbohydrates and when protein and fat constitute a large amount of the diet basic changes may take place which alter the mineral metabolism. At all events the problem still awaits an ingenious physiologist to unravel.

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39 West 38th Street.

Desiccated Stomach in Pernicious Anemia

Desiccated, defatted, whole stomach is effective in inducing and maintaining a hemopoietic remission in patients with pernicious anemia. Seven to 10 gm. of the dried substance daily, representing 50 to 67 gm. of the fresh organ have been found effective. A clinical dosage of 10 gm. for each million red blood cells deficit per cubic millimeter offers a wide margin of safety. The response is similar to that following liver extract, and the average increase in the number of red blood cells is about 500,000 per c. mm. per week during the first eight weeks.—C. C. Sturgis, M. D., and R. Isaacs, M. D., in Amer. J. M. Sciences, Nov., 1930.

Cancer Prevalence and Curability

The first point that I would make is that the public is intensely interested in this subject. It is an enlightened public, instructed by wireless, by the pulpit, by popular books, and more particularly by the press. It has generously provided and is generously providing the funds necessary for the purchase of radium in large quantities to be used in the treatment of cancer and for teaching and research. The medical profession cannot afford to ignore it, and the more they take the public into their confidence—telling them the truth about radium, so far as it is known to them—the better it will be, even if the disappointments are great.

It is frequently stated that cancer is increasing, and the statement has appeared in the newspapers, to the disturbance of the public. The statement is of course true in so far as the number of deaths from cancer is greater, but there is an explanation which shows that there is little cause for alarm. Dr. Dunlop, the Registrar-General for Scotland, in a recent communication to the Medico-Chirurgical Society of Edinburgh, dealt with the recorded deaths from cancer in Scotland during the period 1911 to 1928. The main conclusion from the paper is that an ageing of the population, by leading to greater numbers being alive at those ages in which the cancer death-rate is high, accounts for three-fourths of the observed increase in the cancer death-rate. With one exception—mammary cancer—the remaining increase may be attributed to better recognition of the disease principally by histological and X-ray examination; e.g., cancer of the prostate and ovary by histological methods, and cancer of the lung and intestinal tract by X-ray examination. Mammary cancer alone appears to show a true increased frequency.

This then is my second point. There is no cause for undue alarm in the increased number of deaths from cancer, but I would remark that there is no evidence from the statistics referred to that treatment by surgery of cancer has in any way affected the death-rate.—J. M. W. Morison, M. D., in Proceedings of the Royal Soc. of Med., Nov., 1930.

Extract of Fish Liver in Pernicious Anemia

An aqueous extract of fish liver administered in adequate dosage to patients suffering with pernicious anemia can induce a reticulocyte response and an increase in the red cells and hemoglobin. Subjective and objective improvement follows and is comparable to that seen in patients with pernicious anemia treated with whole mammalian liver or with adequate amounts of potent liver fraction. Another source of the principle or principles capable of inducing a remission in pernicious anemia is demonstrated.—J. E. Connery, M. D., in Amer. J. M. Sciences, Nov., 1930.

Roentgen Diagnosis of Gall Bladder Pathology

(Concluded from page 97)

1. Intensity of the shadow.
 - a. Homogeneity.
 - b. Mottled (due to presence of cholesterol stones).
 2. Contour.
 3. Size.
 4. Location.
- In the event of no shadow appearing on any of the exposures, but one conclusion can be drawn—that of a negative response, indicating gall-bladder pathology, suggesting dysfunction or obstruction.

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Facts and Fads in Infant Feeding*

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Abraham Jacobi, one of the American pioneers in scientific pediatrics, and especially in problems relating to infant feeding, once said, "You cannot feed babies with mathematics, you must feed them with brains." That slogan holds as good today as it did almost five decades ago, but with this modification—that brains are not as great an essential today as they were in the early days of Jacobi, when pure unadulterated milk was the exception rather than the rule; when infant-food manufacturers were not only more solicitous, but less scrupulous in the dissemination of the "baby food" gospel; when young mothers were less informed about the importance of proper feeding in the early days of life; and when health centers were not even in an embryonic state. There is no doubt that we have entered an era of simplicity in infant feeding, and fortunately so. It is true that just as there is a science and art of medicine, just so is there a science and art of infant feeding; and while we can learn the science in schools and textbooks, we must acquire the art through clinical observation, personal application, and experience. In this country the infant mortality from nutritional causes is constantly on the decline. Our sound and simple methods of feeding are partially responsible for that decline. On the European continent, and especially in central Europe, where Heubner, Rubner, Meyer, and Finkelstein did the pioneer work on the fundamental principles of infant feeding, the results are not quite so good as ours. One reason for that is, I think, that their methods of infant feeding are innumerable. Every clinic has its own distinctive method. The physician who is not connected with a clinic is therefore at a loss as to how to feed infants. The late Professor Pirquet, in answer to my question as to why he introduced the Nem System of feeding, replied that infant feeding had become too complicated and he felt that it was his duty to bring about some form of simplification. By his introduction of his new system of feeding, he introduced an entirely new unit, the Nem, an entirely new nomenclature, and so many equations and facts to be remembered, that only the clinic conducted by Pirquet and his associates use that system. When one comes to Czerny's clinic in Berlin, one finds that many of the infants are fed on the butter-flour mixture. In Langstein's clinic in Vienna, almond milk is used considerably in infant feeding. I might go on to enumerate a host of other large clinics where highly complicated methods of feeding are in use.

It is best, both for the welfare of the baby as well as for the physician, to get into the habit of using the simplest formula and to use one particular standard method rather than change the method in each case. By constantly using the same method, he learns its pitfalls and comes to value its advantages. The one method of artificial feeding that will yield the best results in the greatest majority of infants is whole cows' milk diluted with water and enriched by the addition of carbohydrates. While evaporated milk and the proprietary foods may serve certain definite purposes in the hands of the specialist, I feel that the general practitioner will not miss the above mentioned products at all if he will limit himself and use simple cows' milk dilutions

with the addition of carbohydrates. Three things are necessary and only three, in the preparing of most formulae, and they are: good cows' milk, boiled water, and carbohydrates. The water dilutes the protein and the salts to a point where the percentage content of the same is almost equal to that of mother's milk. The fat content of both mother's milk and cows' milk for practical purposes is the same. By the addition of carbohydrates, we can replace the deficiency of fat brought about by the dilution. Furthermore, by giving a low fat and a high carbohydrate diet, we avoid the formation of soap stools, stools which follow the ingestion of high fat and low carbohydrate formulae and which rob the body of minerals such as calcium and magnesium. This loss might perhaps be partially responsible for the tendency to rickets.

It is a fact that the simpler the first formula on which a baby is started, the easier it will be to satisfy its later needs for growth and development by increasing or decreasing the individual components of the diet. It is also a fact that the very great majority of infants, perhaps 85 to 90 per cent., will tolerate a wide range of quantitative values in the components of the milk, that is, fats, proteins, carbohydrates, and salts.

A growing child requires far more food than its weight would indicate. If we calculate the food requirements of a baby in terms of ounces per pound of body-weight, or calories per kilogram, we may say that the older the baby—provided its gain has been proper—the less food per pound of body-weight it needs. Theoretically, the requirements are in inverse proportion to the body-weight. It may almost sound paradoxical to say that the food requirements of a normal growing organism per pound of body-weight decrease every minute of its growing life. It has been determined that an infant, during its fourth to the sixth month, consumes twice as much food per kilogram of body-weight as an adult. Furthermore, it is essential to remember that at all times, in the feeding of babies, we must calculate the requirements of food, not on the basis of the actual weight, but on the basis of the proper weight for the actual age. A thin, poorly nourished infant requires more calories per kilogram than a fat and fully nourished one. Most infants will thrive properly on one ounce and one half of milk per pound of body-weight, 3-2 ounces of fluids per pound of body weight and one-tenth to one-eighth of an ounce of additional carbohydrates per pound of body-weight for every twenty-four hours. If one remembers these three facts and mixes brains with them, the formula will usually be a very good one. After figuring out a formula on the basis of one ounce and one-half of milk, three ounces of total fluids, and one-tenth to one-eighth of an ounce of additional carbohydrates per pound of body-weight, it is well to check up as to whether sufficient calories are present. There is no caloric method of infant feeding. We only use that as a check for our formulae. Roughly speaking, each ounce of whole milk has 20 calories and each ounce of carbohydrates has 120 calories. Reckoning the daily caloric requirements of a normal growing infant anywhere from 40 to 60 calories per pound, it becomes evident how easily one can check up a formula and make certain that the infant gets the required number of calories. I said that we

* Read at combined meeting of the Philadelphia County Medical Society and the Philadelphia Pediatric Society.

allow one-tenth to one-eighth of an ounce of additional carbohydrates per pound of body-weight; if an infant weighs more than fifteen pounds, we thus find it necessary to give the baby more than one ounce and one-half additional carbohydrates per day. It is usually best to give that excess in the form of cereal-waters or cooked cereals, thus preventing the tendency to fermentative diarrheas. However, I must admit that I have often given even up to two ounces of additional carbohydrates without seeing any ill effects. In fact, I consider this as perhaps the most important statement that I will make tonight, namely, that if the baby in question shows an unsuitable gain on a well-figured-out formula, there is only one thing to do and that is to add more carbohydrates. The assimilation limit for sugars in infants is much higher than that in adults. An adult may develop glycosuria when he ingests one to one and one-half grams of milk-sugar per kilogram of body-weight. An infant can take as many as three and one-half grams per kilogram before glycosuria will develop. Repeatedly has that lesson been forced upon me when making rounds with Professor Finkelstein in his clinic in Berlin, a man who stands today as the world's greatest authority on infant feeding. His young assistants would juggle around a formula because the baby was not making a satisfactory gain. All that Finkelstein would invariably insist upon was usually the addition of more carbohydrates, and a substantial and proper gain would take place.

What carbohydrates shall we use? Sugar of milk is a physiologic sugar. It is present in both breast milk and cows' milk. It is a good sugar to use when there is a tendency to constipation because it is a laxative sugar. Each molecule of lactose is broken up into one of glucose and one of galactose. Galactose is one of the slowest absorbable sugars. It therefore remains in the intestines a fairly long period, ferments, gives rise to gas-formation, and hence increases peristalsis and frequency in stools. Ordinarily, cane or table sugar will fill the requirements of most infants. It is cheap, easily obtainable, and is always in the household. One of the disadvantages is that when given in large quantities it will be too sweet. Another disadvantage is that each molecule of cane sugar is broken up into one of glucose and one of levulose, and levulose, like galactose, ferments much more readily than does glucose or dextrose. Dextri-maltose is a very excellent carbohydrate. It is made up of maltose, a disaccharid which in turn is broken up into two molecules of glucose—a sugar that is not as readily fermentable as levulose and galactose—and dextrin, a partially hydrolyzed starch. Because of the dextrin, there is less fermentation and we can therefore give larger amounts of this carbohydrate without fear of any tendency to fermentative diarrhea. It is for the reason that dextri-maltose can be given in larger quantities when there is an insufficient gain in weight that it has gained such wide popularity. Another reason, perhaps, is because of the highly skilful advertisement. Karo or corn syrup is a carbohydrate that really belongs to the same class as Dextri-maltose. It is even still more advantageous because it is cheaper than Dextri-maltose and it has its special field of usefulness in acid formulae, which I shall mention later. I make it a rule to use two or more sugars in all my formulae, thus decreasing the tendency to fermentation and leading to a bigger gain in weight.

With reference to the water, it must not be forgotten that young infants require at least three ounces of fluid per pound of body-weight, and later at least two ounces. An insufficient intake of water is more dangerous to an infant than a corresponding deficiency in the food. All

aqueous solutions are rapidly absorbed and in case of nutritional disturbances, during the hunger and up-building period, it is very important to supply water. There is even no objection—in fact it is advisable—to add sugar to the water, for the sugar in an aqueous solution is rapidly absorbed long before there are opportunities for fermentation.

I notice that as a rule physicians use too great dilutions of milk, as if they were afraid of the milk. It is a good rule to remember not to go under an ounce and one-half of milk per pound of body-weight, once the infant has shown that the formula agrees.

One of the best tests of a suitable method of feeding is the adaptability of the formula to the feeding of premature and immature infants. I have had an increasing number of premature and immature infants who did not thrive until they were placed on an ordinary whole milk dilution formula. It is a biologic law that rapidly growing animals need more proteins than those that grow slowly, for the proteins are the cell or tissue builders; they are the bricks of the human building. The calf, for whom cows' milk was meant, is a rapidly growing animal in comparison to the human infant. A calf at six months of age is a perfectly independent creature; the infant at that age is highly dependent and small. Cows' milk, rich in protein, was therefore meant for the calf and not for the human being. In the diet of the normal human being, calculated in terms of calories or Nems, only ten per cent. of it need be in the form of protein, but it is a fact that premature as well as immature infants grow more rapidly in proportion to their weight than full term babies. They—we might say—make up their lack of intra-uterine gain during their extra-uterine life. Hence, they need a high protein diet. It is therefore a great error in infant feeding to dilute cows' milk too greatly just because one is dealing with a premature or immature baby. It is true they will not tolerate too much fat; that element may cause a distressful diarrhea. A very good food, therefore, for the premature and immature—next to breast milk—is skimmed straight cows' milk, enriched with carbohydrates. In fact, a certain percentage of these babies will not thrive on breast milk until they are fed extra protein, in the form of casec or plasmon—for breast milk has only one and one-half per cent. protein, and it was meant for the full term and not the premature or immature infant. Unfortunately, there is still a considerable number of general physicians who read the label on the can and give the advice to the mother. In other words, they also depend for their information on the baby-food manufacturers. The clinical experience of most pediatricians points to the fact that simple milk modifications are the easiest and simplest methods of infant feeding and contain less pitfalls than any other one. Take even the supposedly most ideal proprietary food, namely, S. M. A. That food is highly inflexible and unmodifiable. If you feed a baby S. M. A., and it does not gain, you can only increase the quantity but not the quality. If one figures that the average baby will take, per feeding, two ounces more than its age in months, and you have increased the S. M. A. to that point, and the baby does not gain, the hands of the physician are tied. He is unable to modify the S. M. A., he cannot make it any stronger than it is. Quite the contrary with the whole milk dilution. One can increase the milk, one can add more sugar, one can add more carbohydrates both in quantity as well as in variety.

The chief objection to the use of proprietary foods in infant feeding is the fact that the parents commonly receive their advice from baby-food manufacturers, and if one food does not agree with the baby, there is a rapid

transition to another food. This, unquestionably, is a considerable detriment to the growth and development of the normal infant. Sweetened condensed milks, although advertised as complete infant foods, prove to be most unideal foods when we consider their percentage composition, for it is impossible to make of them a properly balanced formula by simply adding water. If we add enough water for the carbohydrate to be around 7 per cent.—the percentage content of breast milk—then the protein and fat become insufficient for proper growth and development, and if we add less water to insure proper protein and fat content, then the carbohydrate is entirely too high for it to be given over a long period of time, as it leads to a typical "condensed milk baby," the highly water-logged infant with a low resistance, an infant whose behavior simulates very closely the "hydro-labile" infant of Finkelstein.

As a result of the recent resurrection of evaporated milk in infant feeding, reports are coming in from various clinics on their results. The successful results of feeding 752 infants with evaporated milk, recently reported by Marriott, are certainly very beautiful, as far as the immediate effects are concerned, that is, gain in weight, growth and development, but it will remain for the future to show the later growth, physical and mental development, of those children, in comparison with babies fed on other types of food. A recent study made by Carolyn Hoefer and M. C. Hardy, and published in the *Journal of the American Medical Association*, on the later physical and mental development of infants fed on different types of foods, shows that the best physical and mental development was found in those that were breast fed, then came those that were bottle fed, and finally those that were fed on evaporated and powdered milks. In evaluating a method of feeding, we must, therefore, not only consider the immediate conditions, such as gain in weight, but also the ultimate fate and development of the child. It has always been the impression of pediatricists at large that babies fed on evaporated milk are not as solid and do not have the same turgor as babies fed on ordinary milk dilutions.

I should like to mention another highly advertised product which is being used in infant feeding formulas, and that is gelatine. Its advantages are supposed to be the fact that the end results of its digestion show no indol and therefore there is less putrefaction; also the fact that because of its cohesive and adhesive properties, it gives rise to less vomiting. I shall leave it to the common sense of straight-thinking physicians to judge as to how genuine or scientifically correct this latter contention is. It certainly does not sound scientifically plausible that a few grams of gelatine, added to an entire day's formula, will give rise to less vomiting by virtue of the cohesive and adhesive properties of the individual molecules of the gelatine added. Furthermore, gelatine is an animal protein and there is sufficient protein in the cows' milk formula for the normal needs of the growing infant. It seems, therefore, superfluous to add a protein which is entirely unphysiologic and contradicts all our past experience in infant feeding. Hamburger, for instance, in the University Pediatric Clinic in Berlin, showed me two infants that he has been raising on a milk-free diet from the first day of their life. He had been feeding them ground-up meat extracts and ground-up liver, and they were apparently faring well, but of course those cases are exceptions and it can only be done in a clinic. They are not practical and certainly not to be recommended to the laity.

For a while, Czerny's butter-flour mixture reigned

supreme, especially in the cases of under-nourished infants. I heard Czerny describe how the idea came upon him to use this butter-flour brown sauce, or Buttermehl-einbrenn. He said that he was watching his wife prepare a brown sauce in the kitchen. His wife informed him that the butter and flour became more palatable and more digestible when treated in that manner. His knowledge of physiological chemistry immediately informed him that by heating butter the irritating acids, especially butyric acid, were driven away; also the flour became de-trinized by the heat and therefore became more digestible. It thus occurred to him that it might be valuable to use that type of mixture in infant feeding because it is a high caloric food, containing about three and one-half per cent. of extra fat and in a more readily digestible form. It still has its field of usefulness in normal under-nourished infants. It certainly should never be used in cases where there exists any tendency whatsoever towards diarrheal conditions.

Some of the fads have come to stay with us, because they are based on scientific data and became entrenched because of accumulated clinical experience. I am now referring to acid milks. The feeding of acid milks to normal infants and to infants suffering from nutritional disturbances is not at all new. In fact, over two decades ago, when Professor Czerny was casting about for methods of feeding cases of nutritional disturbances, there were several Scandinavian doctors in his clinic and they mentioned that the peasants over in Holland used buttermilk, an acid food, and had been employing it for many years with apparently good success. Czerny then began to use it and he soon became an enthusiast of that mixture, and it came to be known as Die Holländische Nahrung or the Holland Method of feeding. That method of feeding had then spread to many other clinics in Europe, especially in the feeding and treating of cases of nutritional disturbances, because of the low fat and acid component. Marriott popularized acid feeding in this country. In view of the great buffer action of cows' milk on the gastric acidity, that is, the ability of cows' milk to bind large amounts of hydrochloric acid, thus reducing the acidity of the stomach, and interfering with, or at least diminishing proper gastric digestion, it is this fact that served as the scientific *raison d'être* of the widespread use of acid milk. Normally, effective digestion does not begin until the pH value of the stomach reaches 5.0; hence, it is now the practice to add lactic acid, hydrochloric acid, or lemon juice to bring up the acidity of the stomach to the point of effective digestion. The advantage of the acid milks is that we can feed infants larger amounts of sugar and milk, thereby making the food richer in calories. It also seems to have a definite place in the feeding of premature and malnourished infants, in whom a high caloric food is required. Karo, a corn syrup, has its special field of usefulness in the making of acid milks, for we can add the acid to the syrup and then add this mixture to the milk more rapidly than ordinarily, without causing curdling of the milk. An additional advantage of the acid milks is that the lactic acid bacilli outgrow other possible harmful or putrefactive organisms, and thus, in a measure, help to fight any possible tendency to gastro-intestinal disturbance.

In conclusion, I wish to reiterate the fact that over 90 per cent. of infants will thrive and develop nor-

mally on ordinary whole cows' milk dilutions, with the addition of carbohydrates. If insufficient gain takes place, more carbohydrates are to be added and it is usually best to use two or more types of carbohydrates. Those carbohydrates whose end products are glucose rather than levulose or galactose are usually preferable, as they lead to less fermentation and can be used in larger quantities. Of the remaining 10 per cent. of infants, or even less, that do not

thrive on the simple cows' milk formulae, one must, before proceeding to change the formula, always examine the child carefully to exclude the possibility of any cardiac disease, tuberculosis, syphilis, and, above all, the possibility of the existence of latent brain hemorrhage, for the difficulty may lie not in the formula, but in some underlying pathology in the infant.

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Radical Nasal Antrotomy Under Local Anesthesia

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It is a little more than twenty-five years ago since a German rhinologist, von Eicken, first described his method of performing radical exenteration of the maxillary antrum under local anesthesia. That was in 1904. Three years later the method was reported as exceedingly popular in Siebenmann's clinic. In Vienna, it has been taught for many years. I first saw it performed by Prof. M. Hajek in his *Krankenkasse* in 1910, but upon returning to this country, it was several years before I undertook it, chiefly, I suppose, because my colleagues were all using general anesthesia in major sinus work.

In minor sinus procedures, and, to be sure, in operations upon the nasal septum, most of us began our work under the aegis of "local" and have continued it ever since, except in certain cases where general anesthesia would be called for no matter what operation is under consideration. The general surgeons are using "nerve blocking" and "regional" anesthesia more and more each year, and there seems to be a very favorable attitude toward extending its influence. The introduction of novocaine has had an enormous effect upon surgical opinion, because it has proven to be quick in action, efficient in abolishing pain in the infiltrated area, and relatively safe when used in dilutions of one per cent or less. No sooner, however, had the merits of novocaine become known than the synthetic chemists set to work to give us a great variety of substitutes, most of which have been hailed with enthusiasm at first, only to sink into oblivion within a relatively short time. During the war, novocaine had to suffer the ignominy of having its name changed to *procaine*, a cognomen which I regard as unfortunate because of its phonic resemblance to cocaine. Personally, I am still old-fashioned enough to stick to the word *novocaine*, but the name is surely of secondary importance after all. The chief desideratum is to have a sterile non-toxic solution of such low percentage strength that large quantities can be injected into the human body at will without causing any uneasiness on the part of the surgeon. One-half of one per cent is ample for most needs of the rhinologist, and I have found as little as one-fifth of one per cent satisfactory in some patients upon whom it has been used. Various pharmaceutical houses have "detailed" the profession, and have described at length the great advantages which their particular synthetic product has. Many of these I have tried and have found them

usable, but in some cases, at least, have had to finish the operation after injection of novocaine because of the pain and restlessness of the patient. There is not much reason for further experimentation along this line, and I have resolved to stick to the drug which never fails me instead of listening to the blandishments of other charmers.

Before undertaking a radical antrum operation one should be sure that it is the method of choice—that is, one should be reasonably sure that no conservative intra-nasal procedure is likely to bring about a cure. This is a matter simple enough after all; for there is no harm in making an opening beneath the inferior turbinate for irrigation and drainage purposes, and in order to introduce a suitable "scope" for direct inspection. The tendency to closure needs to be borne in mind in every instance, and, therefore, the opening must be large enough to allow for a certain reduction in size through webbing and hypertrophy of adjacent tissue. In other days it was quite the custom to sacrifice "the anterior end" of the inferior turbinate, in fact, authorities described this as a step in almost any attack upon the antrum, and in some cases the advice was so well taken that not only the anterior end but the posterior as well came out with the snare—in other words the functional value of this "swell body" was destroyed from that time on and even forevermore. Most of us know in these days that complete removal of the inferior turbinate for anything short of malignancy is wrong, because the loss of it causes dryness, cough and other symptoms about which the patient complains bitterly.

There are among us excellent men who think that there is no "call" to do a radical antrum operation. They say that no matter how bad the pathology within the cavity nor of how long standing it is, simple "drainage" and admission of air will "cure" the patient's symptoms. Unfortunately, my own experience has not been so happy. Numerous patients have been seen both in public and private practice where a satisfactory removal of the naso-antral wall has been done, but nasal discharge, frequent colds, and a lighting up of the old condition with neuralgic pain in the face have occurred to the disgust and discomfiture of the individual, and with no encomiums for the surgeon who "operated". However, one should not listen with too sympathetic an ear to these complaints; for, certainly, no harm has been

done where the procedure has comprised conservation of the turbinate and resection of the naso-antral wall. In fact that is a part of the radical operation and would have to be done any way. The patient wants to know how to get rid of the disgusting discharge, the nose blowing, the many handkerchiefs daily, and the taste and odor which nearly always prevail. Well, if the conservative operation fails, the radical will, most likely, cure. Cysts and polyps within the antrum can scarcely be expected to wither and disappear through simple opening of the antrum through the turbinal wall. These conditions are frequently met with, and, to my mind, constitute a definite indication for radical removal of the lining of Highmore's cavity.

Other indications for this operation are, of course, necrosis of the bony walls, certain cases of malignancy, odontomas, dentigerous cysts communicating with the antrum or invading it, and, finally, any condition, purulent or other, which will not get well by conservative operation or other therapy.

The element of time has much to do with a decision. Any antrum disease which refuses to improve very much by normal conservative means after a month of intelligent and repeated treatments is likely to require radical operation. In fact the doing of a radical is the shortest and best way to prompt and satisfactory cure. There is no need to temporize, for the operation under local anesthesia is so easy and makes such slight demands on the patient's time and strength that it is a shame not to do it when the indications are well set.

The X-ray is, to be sure, of great importance in helping to make an operative diagnosis, but only when the plates are made by one who understands the special requirements in this field. The study should be stereographic in each instance, and the rhinologist should make the reading himself, as he, from surgical experience, has learned to check the radiographic evidence and to discount the unimportant shadows on the plate. Not infrequently patients bring plates to my office which for operative diagnosis are quite worthless. It is my practice never to operate upon a sinus until I have studied satisfactory plates therefrom.

After trying out various other procedures, there seems to be at this time a unanimity among rhinologists that the Caldwell-Luc is the method of choice in practically all cases. Nobody has been able to set up any valid objections to it that will stand the test of experience. Theoretical objection was made that it caused destruction of the superior dental nerve with resultant loss of teeth. This was gone into very carefully by research workers and found to be false. When properly carried out the operation does not invade the channel containing the nerve any more than a radical mastoid invades the fallopian canal in the compact mass of bone. Certainly, in those cases such as malignant growths, where conservation is not the primary object, almost or even all of the superior maxilla may have to be removed. We are not talking of atypical conditions but of the case of average severity seen in daily practice.

And now for the operation. It is well in all local work to give a sedative. We have been trying phenobarbital, given from two to four hours preceding operation so that the effect will be established when the patient comes to the operating room. Sometimes it works well, but again there seems to be little help to the patient. I have seen excitement after the use of six tablets of a proprietary drug which I will not mention; this in a naturally high-strung man. The surgeon may, if he has his patient

well in hand, do more to calm the nervousness than most sedatives used in the average dosage can accomplish.

The patient is placed in the semi-reclining position on the operating table, and a pledget of cotton soaked with ten per cent cocaine is passed below the inferior turbinate to cover the entire naso-antral wall. There is an advantage in adding a few drops of adrenalin to help secure hemostasis.

For injection, novocaine, one-half per cent to one per cent, is used, to which has been added adrenalin, from five to ten drops to the ounce of novocaine. A good glass ten-c.c. syringe fitted with a long flexible needle is filled with the anesthetic, and starting at the frenum, the solution is injected along the entire proposed line of incision as far back as one can conveniently go. Then the needle is introduced under the cheek in the region of the infraorbital foramen. One should have the index finger of the left hand outside, on the cheek, so that it may be well known just where the needle point is at work. Otherwise one might accidentally inject into the orbit, or even into the globus. It is well to strike the nerve, if you can, but it is not imperative; for good anesthesia can be obtained by surrounding the nerve exit. In cases of bad after-pain, I have sometimes wondered whether injecting the nerve trunk was not responsible for this sequela. Finally, one should inject a small quantity of the anesthetic in the region of both the anterior and posterior palatine foramina.

A post-nasal plug is not necessary, but one should lay a piece of gauze fluff in the angle of the mouth deeply so that blood from the incision will not run down the throat. It is very important to have the suction outfit working well. There is no need to wait, as the operation can be begun at once owing to the prompt action of the novocaine. An incision is made, extending from the frenum midway between the gum line and the angle of attachment of the cheek as far backward as the last molar tooth. If the incision is too close to the teeth, suture will be difficult, and if too high, the operator's difficulties are increased. Elevation of all soft tissue down to the bone is speedily carried out, as far upward as the foramen, and as far in other directions as necessary to give a good field. Then the antrum is opened with a chisel or burr in the canine fossa well above the apical lines of the teeth. It is not necessary to do much chiseling. The bone is thin, and as soon as the antrum is entered, one can enlarge the opening with a mastoid curette and suitable punch forceps. There will probably be some pain at this time because the lining of the antrum is not anesthetized. One should suck out the fluid contents and apply a twenty per cent cocaine solution on a pledget of cotton held in a strong forceps—an old artery clamp is useful. After the cavity is exenterated, or at least after all diseased tissue is removed, we are ready to make the naso-antral opening. The pledget of cotton lying in the inferior meatus should first be removed, and the inferior turbinate infracted toward the middle line so that plenty of room is obtained to remove the wall. This wall can best be taken down from within the antrum, and is accomplished by means of chisel, mallet, curette and punch forceps. The entire wall as high as the attachment of the inferior turbinate should come down, and the mucous membrane on the nasal aspect of the wall should be destroyed. The text-book description of making a flap and turning it

(Concluded on page 110)

Present-Day Indications For Cesarean Section*

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Cesarean section has been so frequently considered in obstetric literature, throughout the evolution of the modern operation, that one feels almost apologetic in presenting any phase of this time-honored subject. Many, however, believe that the operation is not a simple one and sometimes accompanied by a high maternal and fetal mortality. They also feel that it is too frequently performed to the exclusion of less dangerous methods of delivery; therefore, it may not be amiss in this connection to consider the subject which you have assigned me, namely, the present-day indication for cesarean section.

In the early days of obstetrics this operation was performed only for pelvic deformity of extreme degree and obstructed labor. It was then a last resort operation, with a consequent high mortality. The older members of this society will recall the teaching on this subject that prevailed forty-five years ago. It was not until 1882, the year the writer graduated, that Sanger advised the employment of uterine sutures. This improvement in the operation together with the better appreciation of antisepsis brought about a gradual improvement in maternal and fetal mortality; and the procedure is now more and more frequently being resorted to, for the relative indications, and, in some instances, the child's life alone is considered as an indication. To-day the maternal mortality may be as low as 2 per cent in clean selected cases.

The success of the operation has carried with it an inordinate broadening of the indications. The pendulum has swung from the point of great conservatism due to high mortality in the early days, to that of great freedom in operating due to a lower mortality and to the simplicity of the procedure. The operative furor for cesarean section at the present time reminds one of the operative furor seen thirty years ago in pelvic surgery, when ovaries were removed for very indefinite indications. I confidently believe, however, that in the near future the pendulum will swing back to a position where time and experience should justly place it.

In this day of painless surgery instrumental interference is dominant. It has taken the place of many of the old tried out obstetrical operations. Section has been performed in cases where forceps, version or craniotomy (when the child is dead) would have been a more rational procedure. No problem in obstetric surgery is more difficult to solve than this one, and the right conclusion in any given case can be reached only by one who is continually engaged in obstetrical study. It is important, therefore, that we consider the gravity of this operation, before we can definitely ascertain its justifiable indications.

Maternal and Fetal Mortality

While the mortality in clean and selected cases may be as low as 2 per cent in the hands of the skilled surgeon or in a single well organized clinic, the mortality of the

average operator is as high as 10 to 20 per cent and the fetal mortality as high as 30 per cent.

Cases collected from the literature.

Name	Number of cases	Maternal Mortality percentage	Fetal Mortality percentage
Allen	211	9.19	13.2
Barr, individual	97	0	0
DeNormandie	1161	8.8	33.
Holland	4074	6.8	12.6
Lewis	170	9.4	
Michigan (1914-1920)		10.9	13.5
Montgomery	25	16.0	23.8
New Orleans	362	15.2	19.0
Polak	2000	7.0	5.5
Schauta, personal	128	0	
Boyd, personal	100	2.0	
Williams	221	.45	

Cesarean section by this test is plainly a dangerous measure, and dangerous measures, it goes without saying, should only be resorted to where less harmful measures are ruled out.

There are numerous reasons for this high mortality. One of the most important is the tendency to-day to too great haste and to much surgery in the management of labor. In 1921 I reported 10,642 consecutive cases delivered at the Philadelphia Lying-in Charity and I found that 90 per cent had a spontaneous labor.

Obstetrics is a stern and exacting mistress, consuming our time, energy and best mental effort in the solution of her problems. He who would best serve this mistress, must first qualify by constant study of the science and art of obstetrics; then only can he hold himself in readiness to assist intelligently where nature is found wanting. The time element in labor is most important and we should keep in mind that the word obstetrics is derived from the Latin *obsto, obstarere*, to stand by or against. We should stand by, watching the normal advance of labor, conscious of the fact that we cannot improve upon competent physiology; but should nature fail and the case become a pathological problem, we must be ready to assist, even to the execution of the gravest surgical procedure. In a large group of uncomplicated cases, the teacher should counsel the general practitioner who does the bulk of this work as to the importance of this time element. We should endorse a simple surgical technique for its management, which means careful diagnosis, rigid asepsis, few or no vaginal examinations or rectal examinations, and finally, a constant study of the mother and infant's condition.

It is not surprising that, in this day of great haste, some have suggested and defended methods of cutting short the length of both gestation and labor. In an attempt to standardize obstetrics, we hear of "labor by appointment" or "labor induced at term," which means that at a fixed date, labor is artificially brought on by use of bags, castor oil and quinine, pituitary extract or manual dilatation of the cervix. Others are less drastic, per-

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mitting the patient to go normally into labor at term, but shorten its course by surgical interference so that we hear of prophylactic forceps and the routine delivery by version and extraction. The ability of the surgeon to cut short labor by some medicinal or surgical method, does not make it a scientific procedure unless there is a definite indication, but demonstrates the tolerance of nature to an offense in the normal case, and is often an illustration of meddlesome midwifery. We cannot improve on nature's method of delivery in the normal case by attempting to cut short any of the stages of labor. Are we to recognize this time element or are we to write into obstetrics a new chapter on forced labor. Are we to follow those who believe they can improve upon nature's laws, or shall we submit to nature's laws and base our therapeutics on physiological data soundly established? The conservative course in obstetrics, when the indications are absolute, sometimes does mean the gravest and boldest surgery, but in the vast majority of cases of dystocia several methods of assistance must be taken into consideration and usually an intelligent test of labor is requisite to reach the right conclusion.

Normal labor is better than any of the improvements that we have found for it, as Miller states. Obstetrics is still a specialty in itself, not an adjunct of general surgery, and the lives of parturient women, and of their children, for that matter, are not safe in the hands of men that so regard it. The birth canal, as Findley says, is something more than a makeshift exit to be used only when the surgeon is otherwise engaged, and Williams is equally right when he points out that, since every justifiable obstetric operation represents a failure on the part of nature, it behooves us to take due care that it does not represent a failure on the part of our intelligence also. Another reason for the high mortality of cesarean section is that the type of obstetric training which is given to-day in many of our medical schools is frankly of a very poor sort. The general practitioner does to-day, and probably always will do, the bulk of this work. He must treat all types of medical and surgical problems. It is too much, therefore, to expect him to be a thoroughly trained obstetrician. He should, however, appreciate his limitations and call in counsel in due time should he not be able to cope with the problem. Sometimes the consultant is a general surgeon who may be even less trained in the refinements of obstetric diagnosis than is his confrère who has summoned him. His first instinct, in any emergency, is to do what he knows how to do best, with the result, as Newell says, that the patient is treated according to the limitations of her attendant. He can do abdominal surgery even if he cannot do intrapelvic operations, or if, as would frequently be the part of wisdom, he cannot stay his hand, and let nature, the best obstetrician of us all, terminate the labor by her own skilful methods. The inability to do an obstetric operation is not in itself a sufficient reason for doing an abdominal one, and even an abnormal run of luck does not vindicate the performance. Finally the mortality of cesarean section is often due to faulty indications or none at all. The literature furnishes the following: Inertia, Dystocia, Exhaustion, Obstruction, Anencephalus, Hydrocephalus, Adhesions, Abdominal Pain, Children in rapid succession, Low grade mentality, Patient's personal desire, etc. The varied incidence is shown by the following reports:

Hospital	Ratio to deliveries
Hawks	1 to 40
Bellevue	1 to 97
Boston Lying-in	1 to 12

New Orleans	1 to 52
New York Lying-in	1 to 585
Potter	1 to 14
Rotunda	1 to 195
Johns Hopkins	1 to 77
Philadelphia Lying-in	1 to 118
Sloane	1 to 36

Although we see from time to time, in every maternity service, cases that would have come to cesarean section if admitted earlier, and if infection or exhaustion had not existed, it is a fact that many sections are performed for indications that seem to me to be indefensible. Is it justifiable for the operator to offer as his excuse that he was more familiar with section than with craniotomy? How often we hear the statement made by the operator, "I have not delivered a woman for twenty years." Is it possible for one so rusty in midwifery to solve accurately the problem of when to operate and when not to do so? Is it surprising that the student who frequently sees the operation performed has it constantly in mind as the treatment for innumerable obstetric complications?

Pelvic Deformity

The most frequent indication for cesarean section is pelvic contraction of great degree—6.5 cm. to 7 cm. in the true conjugate. This absolute indication, however, is comparatively rare. In these cases, with the child alive, and the mother near or at term and in good condition, the problem is easily solved. When, however, the pelvis is over 7.5 cm., a relative indication *only*, exists. Here we are confronted with several methods of delivery; and to decide upon the proper course to follow will tax the skill of the obstetrician to the utmost.

It is impossible, in this large group of cases, always to determine upon the right course to follow prior to the onset of labor; for often a cephalopelvic disproportion that exists previous to labor disappears after a careful test. Unless this test is resorted to, many needless sections will be performed. The labor test is recommended only when the patient is under the direct supervision of the obstetrician in a hospital, where surgical intervention can be instituted at the shortest notice.

In pelvises of moderate contraction so treated, 80 per cent will end with little difficulty. I was impressed some years ago with his conservative course, recommended in a paper on the treatment of contracted pelvis, by Dr. Monroe Kerr of Glasgow (1911). He compared a five years' service at the Glasgow Maternity (1901-6), when cases of moderate contraction of the pelvis (9.3 cm. to 7.5 cm.) were treated frequently by means of forceps, with a later service (1909-11), when they were left longer to nature, hoping for spontaneous delivery. The results were as follows: In 83 cases (1901-6) treated during the period when the forceps were used frequently, there were 7 spontaneous deliveries with no fetal morbidity or mortality. Seventy-six cases were delivered with forceps, showing a morbidity of 15 and a mortality of 25. In 46 cases treated later (1909-11), the expectant course was followed. Twenty-four were spontaneous, with one fetal death; while in 22 cases, forceps were used, with a morbidity of 1 and a mortality of 2. He next studied 130 cases of moderately contracted pelvis treated in ten years (1896-1906). In these cases, the forceps were used early, and there was a fetal mortality of 27 per cent. He compares this mortality with that in a series of cases treated later (1909-11). Here, in 22 cases, the more conservative course was followed, with one fetal death (4.5 per cent). How striking is the difference in the results in these

tables, 4.5 per cent with the expectant course, 27 per cent when the forceps were used early.

The rules governing this course are as follows:

"1. The disproportion between the head and the pelvis must have been such that spontaneous delivery might have been reasonably expected.

"2. The second stage of labor must have been allowed to go on until there were indications in mother and child for haste in the delivery.

"3. When forceps are applied, the head must be fixed, and the operator must expect to be able to deliver with only moderate traction."

When the head is fixed at the inlet, I feel that by judicious traction we can (in selected cases) bring the head past the point of obstruction; failing in this, it is still not too late to resort to cesarean section.

The length of labor which the patient can undergo with safety will depend on the case under study—whether the patient be old or young, sthenic or anemic, primiparous or multiparous. This question can be decided only by the attendant; for some women bear labor with little constitutional disturbance, and reach the second stage still in good condition; while others begin to show the symptoms of exhaustion early in labor. I believe that many cases can be carried safely until the completion of the first stage and the rupture of the membranes; and in the exceptional cases, well into the second stage, until the specialist can ascertain what molding and compression of the head will do to overcome the apparent obstruction.

Care must be exercised in making vaginal examinations, or better, no vaginal examinations, so as to avoid infection. I feel that it is infection, rather than the length of labor, even after rupture of the membranes, which makes the case a bad surgical risk.

Pelvic Obstruction

Next to deformity of the pelvis, as a positive indication for cesarean section, is an insuperable obstacle in the pelvis. The indication here is absolute. If an ovarian cyst is diagnosed during early pregnancy, it should be removed for fear of its causing obstruction later. If, however, the cyst is discovered late in pregnancy and does not obstruct the pelvis, the patient should be delivered by the natural route. The cyst may then be removed at a subsequent date.

A fibroid tumor of the uterus does not demand hysterectomy during pregnancy, unless it is causing trouble. How often, to our surprise, a tumor that obstructed the pelvis early in pregnancy, later rides out of the pelvis and in no way affects the progress of normal labor.

In the exceptional cases, ventrofixation of the uterus occasions trouble in pregnancy. If this is recognized early, the uterus should be liberated, even should the operation superinduce abortion. This course is better than to permit the patient to go to term and subject her to the danger of rupture of the uterus and section.

Eclampsia

As long as the etiology of eclampsia is obscure, its treatment by section is questionable. Elimination is therefore the treatment for the majority of the cases. The following records bear out this statement:

Conservative measures Series	Mortality per cent	Cesarean section	
		Series	Mortality per cent
King	8.8	Bride	66.6
Rotunda	12.5	Eden	46.0
Spalding	18.9	Holland	31.8
Stroganoff	2.6	New Orleans ...	41.9
Williams	10.5	Williams	34.8

With the first convulsion the patient's condition may become so grave that, it matters not what treatment is instituted, a fatal result is inevitable. If the usual eliminative treatment fails, and the immediate arrest of gestation can be brought about more rapidly and with less trauma by section than by other means, then, in the exceptional case (a primipara, near term with rigid cervix) it is worthy of consideration.

Placenta Previa

Cesarean section in placenta previa still has its champions and its opponents. In a symposium on The Treatment of Placenta Previa held in 1901 (29 years ago) I presented a short paper recommending cesarean section. The following were my conclusions:

"I would recommend an immediate examination of all suspected cases under anesthesia, for the purpose of, first, confirming the diagnosis; secondly, determining the variety of the previa; thirdly, discovering the size and position of the fetus; and finally to determine the condition of the cervix. If hemorrhage appears before the viability of the child, if the previa is marginal, if the cervix is dilatable, and if the fetal heart is absent—then version or forceps may suffice. If, however, the child is viable, the placenta previa complete or partial, the cervix rigid, or the fetus transverse—then, in preference to other interference, cesarean section would seem to be indicated.

In 1917, I presented a second paper before the Philadelphia Obstetrical Society, reporting 74 cases. *Seventy-three* were treated by podalic version and *one* by section. Seven mothers died—11.8 per cent. Of these seven cases, three were of the central type. All of the patients who died were exsanguinated on admission, and four of the seven were practically dying. These four should not, in fairness, be included in the mortality. If, then, we deduct these, the mortality rate will fall to five per cent.

In regard to the mortality, we cannot, in my opinion, compare the mortality of cesarean section when performed for placenta previa with its mortality when performed for pelvic deformity. The comparison must be made between the results secured by *cesarian* section and those secured by the older methods of treatment in cases of placenta previa. According to Doederlein's paper, the older methods gave a maternal mortality of 5 per cent, and a fetal mortality of 48 per cent, while cesarean section gave a maternal mortality of 9 per cent and a fetal mortality of 30 per cent. Ordinarily, cesarean section is not warranted unless the patient is in good condition and free from infection. These essentials are seldom present in cases of placenta previa. The initial symptom is hemorrhage, and this first hemorrhage may lower the vitality to such a degree that the patient immediately becomes a bad surgical risk. Then attempts to reach a positive diagnosis of the variety of previa, which are, of course, necessary, may occasion further bleeding and infection; so that, in the majority of cases, when the advisability of section is considered, it cannot be looked upon as a primary procedure. This explains the fact that cesarean section when resorted to for placenta previa will always have a higher mortality than when performed for pelvic deformity. If the mother is willing to take a greater risk for the sake of her child, cesarean section may be performed; but even then, I do not believe that the surgeon should be forced to operate against his better judgment.

In 1901, I said that if the maternal mortality of cesarean section for placenta previa were less, or even not greater, than that of the older method of treat-

ment, then, for the child's sake, it would be indicated in certain cases. My later work has, however, convinced me that the maternal mortality in cesarean section for placenta previa is considerably higher than in the usual methods of handling this condition; and it does not appear justifiable to me to expose the mother to a greater risk on account of the child.

Moreover, cesarean section does not necessarily mean a living child. Rigoir found that the mortality in infants following the cesarean section was 7.6 per cent; and Bar, 5.6 per cent. There exists, also, in section, the danger of incisional placenta previa, which may jeopardize the child's life. The chief causes of the high infant mortality in this condition are prematurity and a weakened and anemic condition. Ranken Lyle, in seventy cases, found only 40 per cent at full term. Strassman, in twenty-three cases, found only 39 per cent at term, 42 per cent premature, and 18 per cent abortions. He concludes that no other method of treatment in placenta previa can ever promise, to any considerable degree, to reduce the fetal mortality.

In considering section, the ardor of the operator should be tempered by discretion. He should remember the dictum accepted by many, "A cesarean section once is a cesarean section always." This dictum has its foundation in the danger of rupture of the cesarean scar in a subsequent pregnancy. No matter how carefully the uterine incision be closed, there is left a vulnerable point; and in a future pregnancy or labor, rupture of the cesarean scar may take place. This is a real danger, and must be remembered, especially in considering section for the relative indications. To quote another obstetrician on this subject:

"Those who are now advocating cesarean section for placenta previa, eclampsia, and so forth, must bear the culpability for the deaths which may result from uterine rupture at a later time. In estimating mortality percentages, such deaths must be credited to the primary operation, and not placed in a class by themselves. It is often claimed by many that if they themselves or other skilled operators do the suturing, no loss of continuity can occur. This is absurd; for no one, however skilled or careful he may be, can vouch for the absolute durability of his catgut, can estimate the phagocytic influence of the uterine wall. Can anyone imagine a more unhappy plight than that of a primiparous woman who has been treated by a cesarean section for eclampsia or a placenta previa, with a perfectly normal pelvis, who is and should be doomed in all her subsequent confinements, to the same abdominal surgery?"

Grave constitutional disturbances, such as severe heart disease or tuberculosis complicating pregnancy, are being more and more treated by the abdominal route than by the vagina. Here it is indicated, if section can be carried out with less trauma or shock to the patient.

In conclusion, I desire to repeat that no question in obstetrics deserves more weighty consideration on the part of the operator than the proper selection of cases for cesarean section. Obstetrics and gynecology are inseparable. The obstetrician must be skilled in obstetric surgery, and the gynecologist without constant obstetric training cannot make accurate differential diagnoses. The practitioner of medicine who does obstetrics, and the general surgeon unskilled in the obstetric art, should, in such cases, call in a consultant.

The chief indication for cesarean section is pelvic deformity. On account of the simplicity of the operation and the fact that it presents such a rapid means of terminating labor, *it has become unduly popular*. We should look upon it as a serious operation often accom-

panied with a high mortality, and it should only be undertaken because other measures have been duly considered and have been honestly and conscientiously rejected as not serving the best interests of the mother and her unborn child. The remedy, of course, is education of both the public and ourselves.

1909 Spruce Street.

Radical Nasal Antrotomy Under Local Anesthesia (Concluded from page 106)

in on the floor looks well in the picture, but is unpractical and unnecessary.

We are now ready for the packing. Iodoform gauze is not used. It is preferable to employ plain sterile gauze soaked in a good mild antiseptic, such as metaphen or hexylresorcinol (S.T.-37) or in iodine 1 and $\frac{1}{2}$ per cent solution. To do this a curved artery clamp is passed through the nostril into the antrum, and the end of gauze is introduced into the jaws by means of a dressing forceps. A short end is then left in the nostril and the cavity is firmly packed.

Finally, the line of incision is sutured with No. 1 chromic gut, interrupted or continuous—I find the continuous chain stitch quick and serviceable. The needle is passed from above downwards, for if passed below upwards, there is great difficulty, and the needle is easily broken. Why anyone should use silk or linen it is hard to understand; for removal is difficult, and painful to the patient. With gut in place, union is complete in a few days, the stitch softens and loosens, and can be picked out with forceps.

The packing is left in place for from twenty-four to forty-eight hours; the longer period is better as there is less bleeding. However, in the presence of much pain or distress from nasal obstruction, I do not hesitate to remove the packing on the second day. There is always some swelling of the face, and what amounts to a temporary facial paralysis due to the action of the anesthetic. The eye on the operated side sometimes swells shut and there is likely to be ecchymosis (black and blue discoloration). The post-operative pain in any sinus case may be considerable no matter what the method of operation. It may come on as late as one week following the operative work, resemble a half-head neuralgia, and may require morphine for relief. Dry heat is always a help in this eventuality, and warm saline irrigations also give temporary aid. There is likely to be a foul odor in some cases which is extremely unpleasant to both patient and friends. Warm saline irrigations followed by the instillation of hexylresorcinol (S.T.-37), full strength, directly into the antrum with the head in a dependent position, will lessen the odor within a day or two. Healing is usually complete within two weeks. The longest time for one of my patients was six weeks, owing to necrosis of bone. It is fair to assume that "silent healing" continued beyond this six-week period, but the patient was at least clinically well.

There are, to be sure, some patients upon whom it is impossible to do any local operation owing to their nervous organization. These are, however, in the minority. A local radical antrotomy carried out as sketched in this little essay is no more difficult than a submucous resection of the septum, and brings no greater discomfort to the patient.

114 East 54th Street.

"Laxatives" and Appendicitis

A possible cause of the increase of appendicitis fatalities is the abuse and self-prescription of laxative medicines which may interfere with normal digestion and normal absorption.

The Bloodgood Portable Frozen Section Table

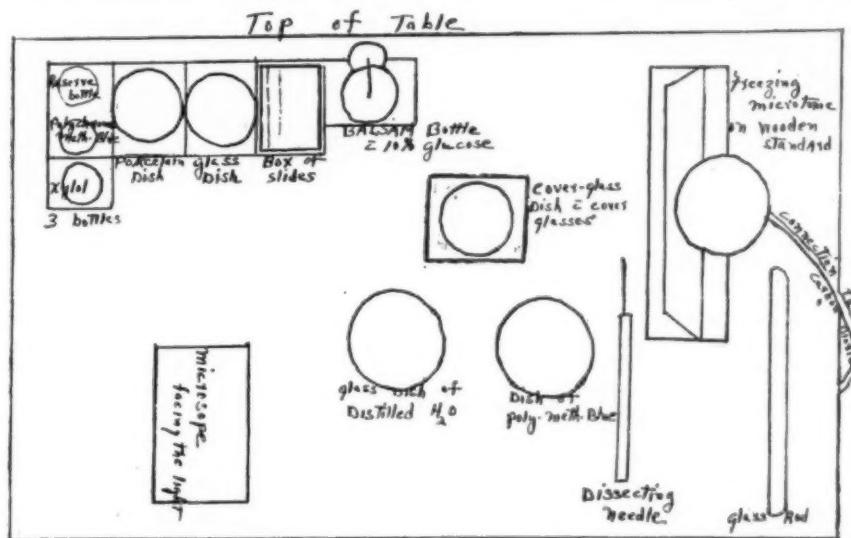
G. S. FOSTER, M.D.

SURGEON TO THE LUCY HASTINGS HOSPITAL
Manchester, N. H.

Some few years ago the idea of doing frozen section work during the operating period came to the mind of Dr. Joseph Colt Bloodgood. The work was done in a room adjacent to the operating room. An examination

prognosticating the individual cases and deciding the procedure while the operation was in progress.

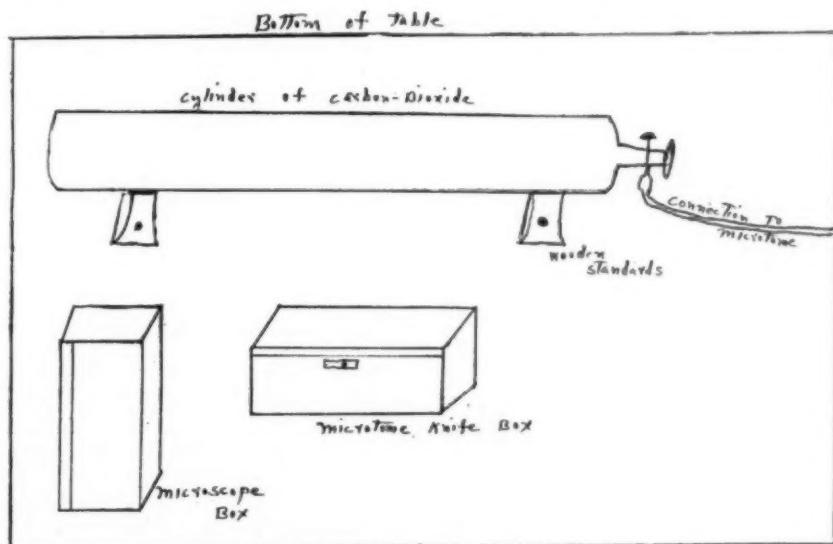
No one would question the feasibility of this routine frozen section work during the operative period. Be-



Frozen Section Table, Top Shelf

of these frozen sections could be made while the operation was yet in progress and a definite pathological diagnosis made. Dr. Bloodgood in his clinic has developed this idea to the nth degree, and, in the majority of his

beyond doubt many of the patients in his clinic have thus been given years of additional life and many others have had a cure effected by this close check-up while the operation was in progress.

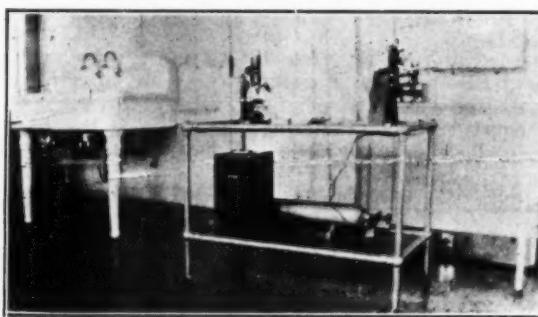


Frozen Section Table, Bottom Shelf

questionable cases, this routine frozen section diagnosis on the ground has no doubt very materially helped in

Having personally seen the good which has come from this pioneer work of Dr. Bloodgood, I have for some

time been using this same routine. Through this work and by the added inspiration of Dr. Bloodgood I have devised a portable frozen section table which has been used in our clinic with much success. This table can very easily and quietly be moved about and used in any part of the hospital at a moment's notice. Thinking that others might be interested in the construction of

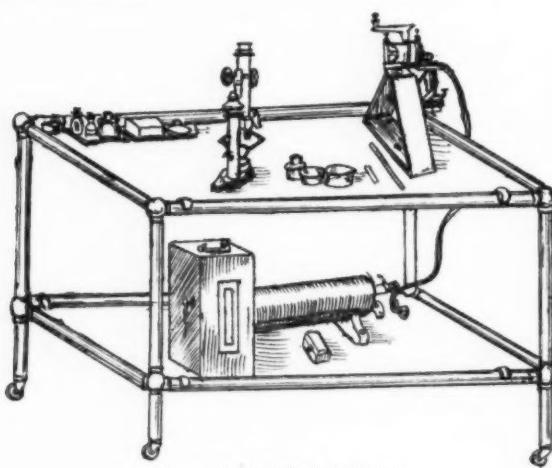


Frozen Section Table Ready for Use

such a table, I submit a plan and description of the Bloodgood Portable Frozen Section Table.

DESCRIPTION OF BLOODGOOD PORTABLE FROZEN SECTION TABLE

The frame work of this table is constructed with two inch iron pipe with globe joints. The table stands thirty-eight inches in height, twenty inches in width, and thirty and a half inches in length. At the base of each perpendicular is placed a three inch revolving, roller bearing castor which is equipped with a vulcanized rubber tire. This permits the moving of the table without noise. It is equipped with two white wood, smooth finished varnished shelves. The top or working shelf is ten and a half inches and the lower shelf is thirty and a half inches from the floor. These shelves are suspended from the frame by angle irons, three on each side, the shelves resting one inch below the upper margin of the pipe so that nothing can slide off. Each angle iron is one inch wide and each perpendicular twenty-nine inches long. If the shelves are hung from the frame each shelf can be cleared at any time and lifted from the frame, a thorough cleaning of the table being possible at short notice.



Frozen Section Table Complete

The upper shelf is used for the working area and is divided. The rear is marked off by Spanish cedar strips one inch wide, which slip into metal grooves, thus form-

ing squares into which are placed the straining bottles, dishes, slides, cover glasses and such other materials as are needed. These sections act as holders and prevent overturning or breakage. The right part of the rear has attached to it a white wood frame holding firmly the freezing microtome, which is also very accessible. The remainder of this shelf, which comprises two thirds of the entire area, is left free for the microscope and the preparation of the sections.

The lower shelf has along the back two grooved white wood bases into which the gas tank with the valve to the right is placed in a horizontal position. Running up along the right posterior leg is the conveying pipe connecting the gas tank with the microtome. This places the tank valve in a very accessible place. On the lower shelf are kept also the microscope and the microtome boxes.

The average time consumed in making a frozen section with this table as equipped is three minutes. The photograph of the table and the diagram of the shelves are self-explanatory as to their completeness and efficiency.

Cancer of the Lip

A survey of the literature on operability suggests that only 10 per cent of the patients who apply for treatment for new growths on the lip are in an inoperable stage. In considering the figures supplied by authors writing from 1878 onwards it must be remembered that the standard of operability has changed very considerably during the period under review. The operative mortality is not serious, except in advanced cases when removal of bone is necessary. Almost all the cases reviewed have been subjected to histological examination, even as long ago as 1865. The crude survival-rate after local excision is 27.3 per cent after five years and 55.6 per cent after three years. The net survival-rate is 29.4 per cent after five years and 58.4 per cent after three years. In cases where the glands were always removed the survival-rate is 80 per cent. There were no great differences between the three-year and five-year rates, for 90 per cent of recurrences occur within three years. The available sample for all stages of the disease and for all methods of radiotherapy gives a survival-rate of 76.1 per cent at three years after treatment. The results of treating recurrent cases are good enough either by operation or by radiotherapy to make treatment worth undertaking.

Cancer of the lip seems to take a slow course if it is not treated, and cases are on record in which the symptoms had been present for 36 years. Most cases, however, come for treatment within one year of the onset of symptoms. The lower lip is much more often affected, the proportions of the two lips being 95 and 5 per cent. It occurs 12 to 14 times more often among men than among women, although women are more apt than men to have cancer in the upper lip. The mean age of incidence is unknown, but the average age of application at hospital is 57 years, and the average age at death is 70 years. Metastases are rare.

The statistical data which have been collected do not support the common belief that smoking has an etiological relationship to cancer of the lip; in 184 cases investigated, roughly one-quarter were affected with cancer at the place where they held their pipes. In the Finisterre district of France, both sexes smoke the short pipe, but cancer of the lip is as rare among women there as in other parts of the world, nor does the literature suggest any other common antecedent condition. There is, however, some reason to suppose that methods of smoking likely to damage the epithelium—e. g., the old clay pipe—may act as chronic irritant agents. The commonest precursory lesions are blebs and ulcers.—*Lancet*, Aug. 2, 1930.

Price's Principles

Price's Principles for treatment of the heart are: 1. avoid embarrassing the diseased heart or aggravating its condition; 2. promote myocardial efficiency; 3. treat decompensation when it occurs; 4. treat symptoms as they arise. Cactina Pillets provide a general and reliable heart stimulant promoting efficiency without aggravating irritations. In most functional cardiac diseases they can be made the basis of treatment with the addition of digitalis, strychnine or other more powerful agents when required.

Chorea

Injection of sterilized milk is recommended by Vipond (*Arch. of Pediatrics*, Oct. 1930) in chorea.

The Family Physician and His Hard-of-Hearing Patient

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New York City

In the centuries gone by it has been customary for us to see deaf people around—old deaf people who place trumpets to their ears into which we have to shout, middle aged deaf people who are constantly saying “What, what,” or else misinterpreting everything we say, and young deaf people, some of them very young children who are looked at commiseratingly and with the feeling that sooner or later they will have to fall into the class of social and economic outcasts.

In this enlightened age, there is no reason why such a state of affairs should continue. There is no reason why deafness, no matter at what age it presents itself, should not be considered a definite physical entity to be treated and carefully studied in the hope that the patient may lead a more comfortable, happier and more useful existence. Into the hands of the doctors these cases invariably fall. The younger ones can be treated medically, sometimes with startling improvement; the older ones often have to be treated psychologically.

The family physician is the one most frequently consulted in the first instance in almost all cases, and it is up to him to see that the patient is started off right and given the benefit derived from years of research, which have placed us in a position where we can differentiate between different types of deafness and outline a course of treatment which may result in lasting improvement and sometimes cure.

Until the last decade deafness was considered a local condition to be treated locally by inflation of the middle ear. Measurements of hearing were made with tuning forks, very inaccurately, and the otologist was frequently more interested in arriving at a diagnosis than in improving the hearing. But hard-of-hearing patients are not interested in a diagnosis—they know they are deaf—they are interested in finding out whether their hearing can be improved. Wandering around from one specialist to another, with no appreciable result, thousands of them have sought aid from the quacks who actually promise cures from the use of artificial ear drums, various types of massage, ear drops, nose drops, etc. As science advanced the quacks have resorted to remedies such as radium, high frequency currents, x-ray therapy, etc. The best that can be said of many of these methods of treatment in such hands is that they raise the morale of the patient so that he thinks that he hears better.

But revolutionary changes have taken place in the treatment of deafness during the past ten years. The old tuning forks which gave a nice hum and whose length of hearing time was often dependent upon the accuracy of the physician making the test, have been replaced by the audiometer which has a range between 156 and 8000 double vibrations. The ears are tested separately and the data charted so that accurate percentages of hearing loss may be reckoned. Secondly, serious studies have been made as to the causation of deafness, mainly through the efforts of the American Federation of Organizations for the Hard of Hearing, until today we have arrived at fairly definite conclusions not only as to the causation of deafness but as to pre-

vention and treatment. Some of these conclusions may be summarized as follows:

1. There are over three million deafened children of school age in the United States.

2. Wholesale testing of the hearing of school children must be made annually to determine how many children are sufficiently hard of hearing to keep them from going ahead with their classes. Tests with the phono-audiometer indicate that over five per cent of school children need some treatment to improve their hearing.

3. A large percentage of school children can have their hearing permanently improved and sometimes they can be permanently cured if they are given efficient treatment.

4. Although local ear treatment is important, it has been proved that deafness is more prevalent in undernourished children.

5. A great many children (and adults too) have some form of sinus inflammation or infection which, in the majority of cases, can be improved or cured without operation (excluding the removing of tonsils and adenoids) if the general physical resistance of the individual can be brought up to par.

6. Deafened adults are not improved by routine treatment of the ears and means must be employed to discover irritating, etiological factors.

7. Although one must differentiate various types of deafness, the majority of hard-of-hearing patients suffer from trouble in the sound conducting apparatus (Eustachian tube and middle ear). The Eustachian tube can now be accurately examined with the nasopharyngoscope and the condition of the ear drum and its motility determined by using the vibratory otoscope.

8. Older people, who can not respond to medical treatment, should be urged to take up lessons in lip-reading (many of the younger deaf people should be urged to do this too) and should be encouraged to wear hearing devices.

The family physician is most often the first doctor consulted by the deaf patient. I regret to say that the treatment of such a condition he considers a closed book. If a person is hard of hearing, as far as he knows he is going to remain hard of hearing and he is going to get worse as time goes on. It is wrong to think that way. Something must be done! He must find someone to whom he can refer such cases! He must do something more than shrug his shoulders and make the patient feel that here is something for which medical science can do nothing.

Let us see where the family physician comes in.

A child, eight years old, is brought to the family doctor by his mother. The child is inattentive in school, constantly fidgets, has a blank look on his face when the teacher asks him a question. At home he studies hard but seldom enters into the family conversation. Recently the mother has a suspicion that the child does not hear well. The child had measles a few years before, two years ago he had had his tonsils and adenoids

removed but he still has repeated colds in the head and "snuffles" and then his inattention is worse than ever. The child is underweight, he may wet his bed at night and there may be a habit of masturbation, vitamins are lacking in his diet, his eyes are strained from unconsciously trying to read the lips of his teacher. A cursory examination shows that the child does not hear well. Something must be done! If the family physician will build up that child physically, if he will get him out of his bad habits, if the teacher will be kinder and give the child a front seat in the school room, if the family will be more indulgent, if the child will be referred to a conscientious otologist, it is possible to improve and often restore the hearing.

A young woman comes to the family physician stating that she is deaf and growing worse and wishes his advice. She also has a distressing tinnitus which is wearing out her nerves. Most family physicians do not know what advice to give. They have sent similar patients to otologists and the patients have returned as bad as ever.

Now, let us analyze such a patient. We find her undernourished, very nervous and apprehensive. She resents the fact that she is deaf. She has given up hope. She has had her tonsils removed once, her adenoids twice and her nose has been operated upon many times. Her vocation is wrong. She is a stenographer. Going into her physical history and examination, the family physician finds out that she is constipated, and there is a large amount of indican in her urine, that she suffers from dysmenorrhea. She is one of a large family who are constantly at swords points. Money is scarce and she always fears that she will lose her job. None of the family eats enough, never the right food. Surely the family physician has a large problem on his hands. He should not be content to send such a patient to a specialist until he has straightened out the physical defects and the family life of this individual. I have found that the majority of my patients have some physical, nervous or mental ailment that must receive attention if I am to get any result in treating their ears. Because of my belief that these troubles are fundamental factors in the majority of cases of deafness, I insist that all such patients remain in my private hospital for at least four weeks while they are undergoing local treatment. By employing an internist, the laboratory and the x-ray and taking care of the psychological factors myself, I am able to form conclusions and get results heretofore unobtainable, at least by me, in spite of the fact that I have been treating hard-of-hearing patients for twenty-five years.

Finally an elderly person who has been deaf for some years consults the family physician. He also has gone the rounds. Everywhere he is told that nothing can be done for him and that, unfortunately, he is going to get worse as time goes on. It is certainly a hopeless picture. But a great deal can be done for him and here the general practitioner with intelligence can do as much as the specialist can. The patient's general physical condition should be brought up to par. He must be mentally reconstructed so that he does not worry so much about his deafness. He should be urged to use an electric hearing device and told that such an apparatus will relieve his nervous strain and actually improve his hearing. It will give him a chance to creep out of his shell and get into intellectual companionship with those about him. He will be able to go to the "talkies" and get a laugh out of or into his system. He will be able to attend lectures and, if you have a good lip-reading teacher nearby, you can urge him to consult her and in a short time, if he takes up lip-read-

ing lessons, you will be confronted by a transformed individual.

Indeed, the family physician can do a great deal for his deafened patient. The sooner he realizes his responsibility and tackles the job, the better off all of his hard-of-hearing patients will be. Saving the hearing of millions of children, improving the hearing of thousands of adults, and making happier the lives of hundreds of old people is well worth while.

64 East 58th Street.

Bronchoscopy in Suppurative Lesions of the Lung

As a pioneer in the science and art of bronchoscopy Dr. Chevalier Jackson has greatly advanced the scientific study of suppurative lesions of the lung, while perfecting the technique of clearing the way to promote their healing. Speaking at a general meeting of Fellows of the Royal Society of Medicine on Oct. 14th he gave it as his opinion that as long as drainage and ventilation were good the lung could resist any infection reaching it by way of the air passages, and that bronchial obstruction was the primary factor in every case of lung suppuration arising by this route. A foreign body is, of course, not necessarily responsible for the obstruction, although Dr. Jackson's reputation has given him unequalled opportunities, of which he has made full use, of detecting and extracting these. Obstruction by viscid sputum in asthmatic patients he finds to be a common cause, and believes that, in many cases diagnosed as asthma, the air-hunger is due to such obstruction and can be relieved by aspiration through the bronchoscope. This highly viscous sputum invalidates the two chief protective agents of the lung—the effective cough and the movement of the cilia. The plug of purulent sputum prevents air from entering to expel it from below, and the cilia, like bees in honey, are clogged and helpless. At this point Dr. Jackson believes a plumber is required to clear the tubes. The extraordinary valve action of certain obstructions was illustrated by a cinematograph projection of some of his diagrams. For example, a pedunculated growth at the junction of the bronchi to the upper and lower lobes was moved by the currents of air in such a way that during inspiration the lower bronchus was occluded, and during expiration the upper. In this way air entered the upper lobe but had no means of escape, while the lower lobe was pumped empty by expiration, but had no means of filling again; as a result emphysema supervened in the upper lobe and atelectasis in the lower, until bronchoscopy revealed the cause of the trouble. A small patch of chronic inflammation in a bronchus may act as an obstruction both by a reduction in calibre of the air channel from granulation tissue and by inhibition of the ciliary action. Stagnation occurs behind the lesion, and an occasional aspiration with the removal of granulations is apparently sufficient to maintain the patient in health. Among his most interesting results Dr. Jackson includes the cure of lung abscesses by repeated aspiration, the number of times which the aspiration was performed reaching 78 in one case. The patient in question insisted on this extreme perseverance, in the face of Dr. Jackson's contrary opinion, and proved by his recovery that he knew where his best hope lay. In other cases, however, three or four aspirations were sufficient to restore to the lung its defensive power, and to make the cough effective once more. The removal of stagnating pus inevitably benefits both the local and the general condition. Another type of case in which bronchoscopy has been of value is that of post-operative massive collapse of the lung, due to an obstructive atelectasis. If the secretion is pumped out the danger of subsequent suppuration is avoided at the outset. Among causes of obstruction other than pins and nuts, Dr. Jackson includes in his experience actinomycosis and blastomycosis, primary tuberculosis of the bronchus without lesions in the lung, portions of bone from operative procedures in the nose and mouth, and fragments of badly tempered instruments. He also finds that on occasion sputum obtained from the bottom of a cavity by aspiration will contain the causative organism of the lesion when the expectorated sputum is sterile. On more than one occasion he has discovered spirochetosis of the lungs in this way, with the result that the use of antisiphilitic remedies gave a complete cure of a previously chronic condition. In a short moving picture Dr. Jackson was able to demonstrate the technique of bronchoscopy with the aspiration of pus, injection of antiseptic agents, and, in one case, the dilation of a stricture of a bronchus by bougies. No general anaesthetic was used for any of these procedures, which occupied only few minutes; cocaine was used to anaesthetise the pharynx and larynx during the introduction of the instrument. A series of lantern slides of the conditions described illustrated the remarkably good results obtained by Dr. Jackson.—*Lancet*.

Suggestions for the Dietetic Treatment of Heart Failure

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In conditions of heart failure the congestive consequences present important dietetic indications. Congestion of the alimentary tract brings about impairment of digestive power; of the liver, impairment of its important functions; of the kidneys, diminished excretion of water, salts, nitrogenous waste and toxins; and of the tissues generally, edema and salt retention and more or less sub-nutrition. In conditions where the heart failure is potential, which include those of myocardial and valvular disease with circulatory compensation, those of high blood pressure with compensatory adjustment of the circulatory apparatus, and those of obesity, the hyperthyroidism and of cardiac pathology occurring in acute infections, in which an efficient circulation is maintained on a lowered plane of reserve power of the circulatory mechanism, the dietetic indications are mostly prophylactic or specific for the associated conditions. Increased susceptibility of the pathological heart to disturbance by mechanical, chemical and bacterial factors and nervous reflexes presents particular indications.

In congestive heart failure more or less restriction of water and salt is required, depending on the extent of the heart failure and congestion. Restriction of protein may also be called for, but it is always desirable to give as near a full ration of protein as possible, so as to favor nutrition of the heart muscle. The condition of the kidneys determines largely the extent of the protein restriction; and the condition of the kidneys, alimentary tract and liver determines the quality of the foodstuffs. In severe congestive heart failure the protein ration should be derived mostly from milk, as well as restricted in quantity; animal flesh is undesirable, and even eggs may be so. And the conditions present may require that the diet be fluid or semi-fluid. The requirement for salt restriction can usually be met by refraining from adding salt to any of the foodstuffs allowed in the diet. The range of foodstuffs suitable in severe congestive heart failure may be limited to milk, modified milk, cream, fresh fruit juices, cereal gruels, lactose, dextrose and water. If the fluid restriction is considerable there may be no room for any water in the diet other than that which is supplied in the foodstuffs. It is sometimes possible to increase the fuel value of a severely restricted dry diet by giving toast or zwieback and sugar, particularly dextrose or lactose. Sugar has an important place in the diet of congestive heart failure.

In conditions of potential heart failure due to intrinsic cardiac disease (myocardial and valvular disease) in which there is no extra-cardiac pathology of note, the diet may be that which is best suited to the needs of the patient generally. But in these conditions, and in any conditions of potential heart failure, the quantity of the food should not be excessive. Also, large meals should be avoided; often the giving of five small meals, instead of three larger ones during the day, favors the cardiac condition; and the evening meal should usually be a light one. Indigestion should be guarded against by proper selection of foodstuffs. It may be advisable to restrict or forbid caffeine and alcohol-containing beverages.

In conditions of potential heart failure due to obesity the dietetic treatment is directed against the obesity, but it is important to bring about the reduction of the obesity slowly. Often it is desirable to combine rest with the reduction treatment; and when the patient is resting in bed the reduction may be made somewhat more rapidly than when he is up and around.

In conditions of potential heart failure due to arterial hypertension a lactovegetarian or a near lactovegetarian diet is usually called for, with more or less restriction of protein and salt.

In the potential failure of the thyroid heart the diet should be lacto-vegetarian, with, perhaps, addition of eggs, and somewhat restricted in its protein ration, but increased in its fuel value.

In acute inflammations of the heart, especially in the young, which occur secondarily, the primary condition as well as the cardiac complications may call for a very easy diet; but after convalescence has been established it is generally advisable to feed the patient liberally, so as to favor a rapid restoration of the cardiac tissues; but a liberal diet does not necessarily mean one containing a large quantity of animal flesh, although a moderate amount of animal flesh is desirable in order to tempt the appetite, stimulate digestion, and develop and exercise the protective mechanism. The diet in these convalescent cases should generally include an abundance of milk and its products, a small amount of animal flesh and eggs, and a wide range of selected fruits, vegetables and cereal foods.

The following dietetic prescriptions are designed particularly for use in conditions of congestive heart failure.

1. DEXTROSE CARDIAC DRY DIET

(Protein, 4 gm. Fat, 4 gm. Carbohydrate, 130 gm.
Water, 840 gm. Calories, 560.)

At 7 a. m.—The following mixture: strained fresh orange juice, 90 gm. (3 oz.), dextrose, 20 gm. $\frac{1}{3}$ oz., water, 120 gm. (4 oz.).

At 11 a. m.—The same as at 7 a. m.

At 3 p. m.—The same as at 7 a. m.

At 7 p. m.—The same as at 7 a. m.

The above diet may be given for a very short time, perhaps only for a day or two, in severe cases of heart failure with edema.

2. MODIFIED KARELL CARDIAC DRY DIET

(Protein, 30 gm. Fat, 30 gm. Carbohydrate, 66 gm.
Water, 1,080 gm. Calories, 680)

At 7 a.m.—Milk, plain, soured or peptonized, 210 gm. (7 oz.).

At 9 a. m.—Strained fresh orange juice, 60 gm. (2 oz.).

At 11 a.m.—The same as at 7 a.m.

At 1 p. m.—The same as at 9 a.m.

At 3 p. m.—The same as at 7 a. m.

At 5 p. m.—The same as at 9 a. m.

At 7 p. m.—The same as at 7 a. m.

The above diet may be given for a short time in cases of severe congestive heart failure with edema.

3. MILK CEREAL CARDIAC DRY DIET
 (Protein, 45 gm. Fat, 54 gm. Carbohydrate, 138 gm.
 Water, 1,500 gm. Calories, 1,200.)

At 7 a. m.—Strained fresh juice of orange, grape fruit or pineapple, 90 gm. (3 oz.).

At 8 a. m.—Moist cooked oatmeal, cream of wheat, wheatena, hominy or cornmeal, 120 gm. (4 oz.), with milk, 120 gm. (4 oz.).

At 10 a. m.—Milk, plain or soured, 240 gm. (8 oz.); or the following mixture: Milk, 150 gm. (5 oz.), cereal gruel, 60 gm. (2 oz.), cream, 30 gm. (1 oz.).

At 12 m.—Boiled rice macaroni or spaghetti, 180 gm. (6 oz.); or old bread or toast, 60 gm. (2 oz.); and butter, 15 gm. ($\frac{1}{2}$ oz.).

At 2 p. m.—The same as at 10 a. m.

At 4 p. m.—The same as at 10 a. m.

At 6 p. m.—The same as at 12 m.

At 9 p. m.—The same as at 7 a. m.

The above diet may be given in the less severe cases of congestive heart failure with edema. Its caloric value may be increased by substituting cream for some of the milk, and by adding dextrose or lactose to the milk mixture or to the fruit juice after it has been diluted with water.

To reduce the original water content of the diet so as to permit addition of water to the fruit juice, cottage or cream cheese may be substituted for some of the milk. Its protein content may be increased by adding cottage cheese, or, if deemed advisable, eggs. In preparing this diet little or no salt is added.

4. LACTOVEGETARIAN CARDIAC DRY DIET

(Protein, 65 gm. Fat, 90 gm. Carbohydrate, 185 gm.
 Water, 1,500 gm. Calories, 1,800)

Breakfast

Orange grape fruit, peach or pineapple; or baked or stewed apple; 90 gm. (3 oz.).

Moist cooked oatmeal, wheat cereal, hominy or cornmeal, 120 gm. (4 ozs.), with milk, 120 gm. (4 oz.).

Old bread or toast, 30 gm. (1 oz.).

Butter, 15 gm. ($\frac{1}{2}$ oz.).

Cream cheese, 30 gm. (1 oz.).

10 a. m.

Milk, plain or soured 120 gm. (4 oz.); or the following mixture: milk, 75 gm. (2 $\frac{1}{2}$ oz.), cereal gruel, 30 gm. (1 oz.), cream, 15 gm. ($\frac{1}{2}$ oz.).

Crackers, soda, graham or oatmeal, 15 gm. ($\frac{1}{2}$ oz.).

Dinner

Cream cheese, 60 gm. (2 oz.).

Old bread or toast, 60 gm. (2 oz.).

Butter, 15 gm. ($\frac{1}{2}$ oz.).

Potato, baked or boiled; or rice or macaroni, boiled; 90 gm. (3 oz.).

Cooked spinach, string beans, celery, squash, oyster plant, carrot or green peas, 180 gm. (6 oz.).

Salad of raw cabbage, celery, lettuce, endive or tomato, 90 gm. (3 oz.), with lemon juice, 15 gm. ($\frac{1}{2}$ oz.).

At 4 p. m.

The same as at 10 a. m.

Supper

Fruit as at breakfast, 90 gm. (3 oz.).

Old bread or toast, 60 gm. (2 oz.).

Butter, 15 gm. ($\frac{1}{2}$ oz.).

Cottage or cream cheese, 30 gm. (1 oz.).

The above diet may be given in moderate cases of congestive heart failure. It may be increased in caloric value by adding dextrose and lactose to a mixture of fruit juice and water and by increasing the amount of the fruit juice. Eggs, if it is deemed advisable, may be substituted for some of the cottage or cream cheese, or may be added. As long as there is much edema little

or no salt should be added to the diet in its preparation.

As the edema abates the water ration may be increased.

After establishment of circulatory equilibrium this diet may serve as a basis for a general diet. Animal flesh may be substituted to some extent for the cheese; but in cases with fragile compensation a lactovegetarian or near lactovegetarian diet is generally to be preferred. After good compensation has been established it is desirable that the diet be liberal within the limitations of the case.

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Spread of Pellagra in South

Pellagra is spreading with rapidity in many of the southern States.

Recently the health officers of these States sought the aid of the Public Health Service, stating that certain sections flooded in 1927 had not recovered sufficiently and were especially hard hit by the drought. Through the aid of the service, the Rockefeller Institute increased its appropriation to these States, where pellagra is a serious menace to health.

The Public Health Service has spent many years in the study of the cause and effects of pellagra, hoping to prevent its spread. Tests have proved that pellagra is not a communicable disease and no germ that can be properly considered its cause has ever been found.

After many experiments in which attempts to give pellagra to persons by inoculations of blood or saliva all had failed, it was shown that unbalanced diet practically in all cases had a tendency to cause pellagra. The reason that pellagra is prevalent in the rural sections of the South is because the major diet there consists of cornmeal, hominy grits, white wheat flour, white rice, dried beans, salt pork, sorghum or cane sugar molasses and collards.

The pellagra-preventing vitamin is believed to be present in most natural foods except the oils and fats, but in greatly varying amounts. Much of this vitamin is present in lean meat and powdered yeast, it was said, but unfortunately, it is not yet known just how much each food contains nor how much is necessary for maintenance of health.

Milk, while it is not rich in the pellagra-preventing vitamin, is one of the most valuable single foods for the prevention and cure of pellagra. Ownership of a good milk cow is a valuable means of insuring an adequate supply of milk for the family, and it is in those families that are too poor to have a cow that pellagra is a serious threat.

Lean meat, which includes beef, mutton, pork, fish and fowl, is endorsed as being rich in the pellagra-preventing vitamin, and when used as a main reliance, an adult will need nearly half a pound of lean meat a day. Dried pure yeast is richer in this vitamin than any food known at present, and is also rich in protein and the beriberi-preventing vitamin, it was shown. For use as a food, the yeast plant should be preferably dead, and may be taken in any way that is convenient.

The Treatment of Migraine by a Ketogenic Diet

Barborka gives an account of fifty cases of inveterate migraine in patients who had undergone many kinds of treatment, including surgical measures, without benefit, and were desperate and willing to try any procedure, regardless of the effort involved. They were placed for many months on a diet low in carbohydrates and high in fats, which produces a ketosis. In fourteen cases the attacks were controlled, and diacetic acid, tested for daily, was always present in the urine in nine and intermittently in five; in 25 cases, in which improvement occurred, ketosis was maintained in two only, and in 23 was periodic; eleven patients were not benefited, but only two kept to the diet accurately so as to be in a state of ketosis. Many hypotheses have been put forward to explain migraine; an alkalosis has been thought to develop forty-eight hours before an attack; many find that an excessive carbohydrate intake precipitates an attack, and in such cases a ketogenic diet seems reasonable. As this diet has a low protein content, it might also help cases thought to be due to excess of protein or to be hypersensitive to some one protein; further, as fat increases the discharge of bile into the intestine and duodenal peristalsis, benefit may result in cases ascribed to derangement of the liver and duodenum.—(*Proceedings of the Staff Meetings of the Mayo Clinic*, 1930, vol. v, 190.)

The Hazards of Two Fields

Losses of inexperienced operators in the stock market are more easily recouped than the losses of inexperienced operators in the abdomen.—*Exchange*.

Proceedings of the Society of Medical Jurisprudence

Academy of Medicine

Crime and the Law*

ROScoe POUND, Esq.

DEAN OF THE HARVARD LAW SCHOOL

Introduction:

JOHN KIRKLAND CLARK, Esq.: During the past two years the Trustees of The Society of Medical Jurisprudence have given much thought to the problems which have confronted all the states and the nation—of the law and the attitude of society toward the law—and they deemed that it was appropriate that an organization like ours, composed of men interested in the work of the legal profession and that of the medical profession, consider various phases of this subject in a series of discussions, of which this to-night is the first.

We had contemplated to-night having a talk by one of those who is quite widely regarded as favoring a very liberal enforcement of the law, and likewise to have some words from a leader of thought in the legal profession who is a member of the President's Commission on law enforcement, to give us the other point of view. We received some weeks ago a reply from Mr. Clarence Darrow that he would be very glad to accept our invitation, and we had hoped to have him here to-night, but received a little over a week ago word from him that he found it impossible to be here at this time, though he would be here on a later occasion. It has therefore been suggested—that as the man who got us into this difficulty by representing that Mr. Darrow was to be here—I present very briefly some of the thoughts I know he holds on the subject, because I had the privilege a couple of years ago of entering into a discussion with him before the Federation of Bar Associations of the Western part of this State.

Mr. Darrow, who is famed as a lawyer for the defense, takes the position that if we could get a man, scientifically trained, to make a complete study of a man's antecedents, in other words, of his inheritance, and a study of his environment, that is, the contacts which he has made throughout his life from early infancy to the present date, and then confront him with a specific situation, the reaction of that personality with that inheritance and that environment to the situation which confronts him is just as certain as is the reaction when we unite two parts of hydrogen with one part of oxygen, and that therefore society owes something to the individual other than the treatment we give the so-called wrong-doer to-day, handed down from what has been the custom of the past.

In other words, then, our problem is—what is crime?—what is what we know as anti-social conduct?—and how shall the individual be treated who is found to have been guilty of committing an act anti-social in its nature? It is a far broader question than any of us like to consider. I remember when I participated with Mr. Darrow in this discussion in

Jamestown, New York, that one of the inquiries I made of the audience, and I am willing to make it to you here to-night, was to ask every one of the audience who thought criminals ought to be punished, how many of them, if they were asked seriously to go over their conduct for the past five years, would find that they had not been guilty of having committed a crime, bearing in mind that any transportation of a quantity of liquor which contains more than one-half of one per cent, of alcohol is a serious offense; bearing in mind that one who drives along the highways of this State of New York at a rate greater than thirty miles an hour is presumably guilty of a crime, and giving thought to the legal definition of what is criminal conduct.

When we come to analyze the conduct of every individual, of an intelligent audience like this, composed of the best people in New York City, we will find that practically every member has been guilty, once or twice, to put it mildly, during the past year or two, of an act which is in violation of the criminal law—but of course the act we committed was not a *crime!* Of course not!

What is a crime? Clarence Darrow says, go back to the Ten Commandments, and he starts out with the Commandment which is the most serious of all, Thou Shalt not Kill, and he goes through the list of killings which are perfectly justifiable in the eyes of the law—killing in self-defense, which has always been regarded as not criminal. Of course those who went through the terrible struggle twelve years ago, and concentrated all their attention for the period of the war on killing all the members of the other army that they could, realize that there are times when killing is supposed to be a great benefit to the world, and not a crime, and if one wants to be particularly disagreeable, one comes down to the Seventh Commandment, which never was a crime in New York until about fifteen or twenty years ago, and I believe that since it became enacted into a crime one defendant has been convicted, Jack Johnson, and he was fined \$100. Of course, in New York State nobody commits adultery to-day; but the law is there, and yet, says Darrow, people are very rarely convicted of some of these crimes.

I remember reading in one of the most famous of recent English cases of a man who was the son of a very prominent railroad executive who was involved in what the tabloids call a "triangle", and the husband, in a mêlée which occurred after he had warned his friend not to hang around the house, was found with the wife and the other man in a very unpleasant sort of mess in which the other man was dead, and the husband was found with a pistol which had been discharged in his hand. The learned judge who tried the case said to the jury that in dear, tight little England there is no such thing as "the unwritten law", though there might be in outlying parts of the

* Stenographic report of an address delivered before the Society of Medical Jurisprudence, New York City, October 13, 1930.

world, and the jury, if they found the man guilty of deliberately killing this other man, must come in with a verdict of murder in the first degree, whereupon they came in promptly with a verdict of possessing a dangerous weapon!

The question is, what is crime? In other words, what is such anti-social conduct as society, organized in the State, should take notice of and punish, and what course of procedure should society follow in dealing with such infractions of such law and with the unfortunate persons who are guilty of having violated the law? In the series of meetings which we are planning to hold this winter we are contemplating discussing the first question to-night, what is crime? What is the violation of the law which ought to render the individual subject to punishment? We contemplate at our next meeting, probably two months hence, taking up the principles of determining who is guilty of anti-social conduct, who is a criminal, and at the third of the series, what should be meted out by way of punishment, reformation, or, according to what theory the criminal should be dealt with, and finally, what shall be done with the man or woman who has been found guilty and has been subjected to such a course of treatment as society prescribes for one who has violated the law, after he is released, and allowed to come out again into the life of the community. Those are roughly the sub-divisions of the subject which the Trustees have passed upon as the most convenient for the discussion.

To-night our discussion is "Crime and the Law". What are the violations of law which should be regarded as sufficiently anti-social to justify society in taking action? There are unquestionably acts performed in violation of public opinion as crystallized in law which must be subjected to some sort of treatment, whether it be punitive or reformative, and those are the problems which particularly confront us to-night. Not all laws which set down the violation of them as crimes are regarded by the community as crimes. Driving up to-night from the Grand Central to the Academy here, the very law-abiding member of the medical profession who drove us violated the law all the way up, because the law provides that, in the built-up portion of New York City, we shall not drive faster than twenty miles an hour—and yet, whenever the green light changed to red, I noticed with satisfaction that he stopped. In other words, we still have on our statute books a law regulating the speed of automobiles in New York City which is entirely out of date, which has no reason behind it, and by common consent, not only the individual citizen, but the uniformed representatives of the law, ignore it. If you should drive at twenty miles an hour, every uniformed guardian of the peace would say "Don't block traffic", and yet there may be behind you a policeman on a motorcycle who can take you to a traffic court, where you may be found guilty of the offence of driving at more than twenty miles an hour. It is with such problems as that that we are confronted, and for which we want to turn to a real legal doctor. This time we can't go to members of the medical profession, but we can go to one who has the time and the opportunity to devote himself to thought on these subjects, which may enable us to determine what our course of conduct should be under such circumstances. In this situation, we all agreed that we could not have secured one better qualified to expound this subject as

the opening talk in our discussion than Dean Roscoe Pound, of the Harvard Law School.

Ladies and Gentlemen: I supposed I was to come here this evening in the rôle of *advocatus dei*. It is more usual for me to appear in the rôle of *advocatus diaboli*. But the *advocatus diaboli* not having turned up, and it seeming to me rather unfair to have only one side of the matter presented, I am tempted to follow the course of the colored clergyman who was called upon to write an obituary. In explaining about it he said that there were two styles open to one who had to write an obituary: "the poetical and the prosaical". He said, "I hab de mos' facil'ty in de poetical style, but in de poetical style you hab to keep yo' eye skinned for de rhyme, and I find dat hamper de full development of my vocabulary; but in de prosaical style you hab to keep yo' eye skinned for de sense; and I find dat impede de exuberance of my verbosity". So he determined to adapt a mixed style; and I am of the impression that a mixed style will be more appropriate than the exposition of the orthodox legal doctrine on this subject which in the capacity of *advocatus dei* I had contemplated.

There are some preliminary warnings I want to give you. The Chairman sent me a printed card on which the subject this evening was announced to be Crime and the Law. That is a pretty broad subject, giving one a good deal of latitude, and I picked out from that broad field what I thought might be appropriate on this occasion. Then without warning, Mr. Clark springs up and tries to put some limits on me; and that suggests to me the method of one of our great after-dinner speakers of the last generation, who, when he had a subject assigned to him on a printed program to which it did not entirely suit his convenience to hew strictly, was in the habit of arising from his place, and in a very deferential way bowing to the presiding officer. He would adjust his glasses, pick up the program, and say "Ladies and gentlemen, I call your particular attention to the subject which has been assigned to me on this program to-night." He then threw it down on the table and said "I shall not have occasion to refer to it again."

The other warning I want to give by way of preliminary is something that to-day has become very serious. To-day above all things we have got to be careful of our terminology. We must speak by the card. But unfortunately the terminology of the scientific man and of the psychologist and of the lawyer, and even of particular schools of science and particular schools of jurists, do not entirely agree. The one thing upon which we all agree is that we cannot understand anybody who uses any different terminology than that which we are convinced was ordained by the Creator on the sixth day, when He said "Let there be terminology", and there was terminology, and he looked upon it and saw it was good; and no other terms can possibly be employed by any self-respecting speaker or writer. About the matter of terminology I have come to feel that we have much the situation that Mark Twain described when he said Homer was not written by Homer, but by another man of the same name. William James used to say about new theories of philosophy that they were simply new ways of putting old ideas, and after all, when we look into a great many of these terms which we must use, I feel that they are nothing but the same man with another name. So if I am a little careless in the eyes of some of you in the use of terms, I shall simply say I am setting up

a school of my own, and as to terminology, one might say what Yellowplush said about spelling, that every gentleman was entitled to his own.

In talking of this subject of crime and the law, I think the best plan to follow is Lewis Carroll's rule for writing a letter; to begin at the beginning, go on to the end, and then for God's sake, stop. To begin at the beginning, what is the task of the law, what is the law trying to do? If Mr. Darrow were speaking to you, he would start with an exposition of positivist philosophy, what I have a sort of feeling is the positivism of 1890, that there is an unfailing sequence of actions, and that anything that happens, whether it is Brother Clark running by a light and exceeding the speed set down by the Statutes of New York, or my deviating from the subject as he laid it down for me, are the inevitable results of something which went before, which was inevitably preceded by something that went before that. It all depends on where we start, and I am going to start not with any philosophical fundamentals of that kind, but with the suggestion that from another standpoint perhaps the fundamental thing is human civilization, the raising of human powers to their highest possible fulfillment, highest in the sense of involving the greatest possible, the maximum control over external nature and over internal nature for human purposes. Because, of course, that control over external nature which gives us the wonderful mechanical civilization of today has behind it and presupposes and rests on a control over internal nature, over human nature, which makes it possible for such a division of labor, which permits men to specialize, which makes it possible for a man to devote his whole life to some minute item in this great mechanical process that has given us the civilization under which we live. That control over internal nature, over human nature, is brought about by social control, by an increasingly organized bringing to bear on each one of us the pressure of the thoughts and the desires of mankind in such a way as to bring about an ordering and systematizing of human relations, an ordering and systematizing of human conduct, that makes it possible for us in some measure to predict what our fellowmen will do and to go on our way in assured confidence that we do not have to look out for any great deviations from what we have been led to expect as the normal course of conduct of our fellowmen. The task of the law is to order, to systematize human relations and human conduct in such a way as to secure the maximum realization of human claims and human desires in a world where I suppose the central tragedy in existence is that we all want the earth. There are a great many of us, but there is only one earth, and if the goods of existence cannot be made to go around completely, we can make them go around as far as possible. Juristically we say that the task of the law is to secure these desires, and the task of the criminal law is a specialized one of securing out of this great mass of human claims those which we generalize as social interests, those which are asserted in terms of social life, and those which are involved in social life as distinguished from the individual life. The criminal law is a specialized form of the law which is a specialized form of social control.

I think the first thing we need to notice is that after all, the law is only one agency of social control, that along with it there are others, some of which have been in their day more powerful than the law, none of which may be entirely overlooked. The first

agency of social control is control by the organized kindred, which is to-day pretty much a thing of the past. As a legal agent of social control it has almost gone out of date. The control over little Willie's earnings by his parents has become pretty slender to-day. The power of the husband to control his wife long ago passed away, and to-day juvenile courts and courts of domestic relations take the place of the old-time interview between father and son in the family woodshed, which used to teach little Willie to fear God and his father and the policeman. Next came organized religion. That was a great agency of social control down to the Reformation, and to-day we have as important agencies of social control fraternal societies and organizations, and professional, trade and business associations, with their codes of ethics, and with their modes of bringing pressure of public opinion within the organization upon those who depart from the canons of what are regarded as proper conduct on the part of a member of the trade or fraternity or profession. I suspect that that for the time being is one of the growing ways of social control. I suspect we need to keep our eye on that agency as one which is becoming more efficacious. But in the immediate past the law has established a monopoly of the employment of organized force as a means of effecting social control. Politically organized society has subordinated all these other means of social control to itself.

Now having indicated something of the task of the law, and the task of the criminal law, we come to this category of crime. What do we mean by crime? We have been referred to the Ten Commandments; but the criminal code, or the penal code of any one of our cities to-day, has an enormously larger content than the Ten Commandments. I believe the Puritan colonies in New England tried to administer punitive justice on the basis of the Ten Commandments in the 17th Century; but even in those simple communities there were certain anti-social actions which required a good deal of interpretation before they could be brought within the realm of any particular Commandment, and I suspect all we can say is that a crime is some course of conduct, or some item of conduct which a particular organized society in some time or place regards as sufficiently dangerous, sufficiently inimical to social interests, to make it expedient to deal with it by the machinery of prosecution and penal treatment. In other words, I doubt whether from a purely legal standpoint we can say that there are *absolute* crimes. So far as a system of law is concerned, it resolves itself into a question of what is expedient in bringing about a regime of law and order in a particular place at a particular time. I am not saying anything about the moral aspects of the matter, but simply putting to you the proposition that politically organized society, through its appropriate organ, has to determine in a particular time and place what items of conduct should be deemed sufficiently dangerous to the general security or to other social interests to justify their prosecution and penal treatment. You will see, then, that we have a very complex category and a category of varying content, and I am skeptical as to the possibility of any *a priori* or any metaphysical delimitation of that field. Whether we shall deal with something through the agencies of civil law or the administration of criminal law I suspect depends largely on questions of legislative expediency in time and place.

Before we go further, we have got to take account

of certain difficulties in securing social interests through the criminal law; certain difficulties that bear immediately on this question of what is expedient in the legal definition of items of anti-social conduct which the law has pronounced as crime. Right at the outset we are confronted by a fundamental difficulty in what we used to call human nature. I believe we are not allowed to talk about that now. But I read last night one of the latest books on psychology, a very interesting book indeed. It was one I read with a good deal of profit, and I was interested to see that in that book there was presented to us a fundamental conflict in human behavior between a tendency to dominance and a tendency to compliance—a fundamental conflict between a tendency to dominance and a tendency to compliance—and right there is exactly the problem of social control. Jurists have been in the habit of calling it a necessity of reaching a balance between the general security and the individual life. The legal expression of social interest in the individual life has behind it the tendency to dominance; the fundamental interest in general security has behind it the tendency to compliance; and probably the psychological problem is to stimulate compliance, and our juristic problem to reach a standard capable of maintaining the general security compatible with the maximum of free individual self-assertion, which is one of the chiefest items in individual life. As we look back over the history of the criminal law, we see a swinging backward and forward between these two conditions. At one time the chief emphasis will be on the individual life; at another time on the general security. The history of the criminal law is full of a swinging back and forth between these two ideals. Take for instance the Roman Criminal law. If you begin in the earliest period, the whole emphasis is on the general security. If something was done that infringed the general security and threatened that the wrath of the gods would descend on the city, the king, as father and high priest of his people, went out and seized the offender and sacrificed him to the gods to appease their wrath; or if he was a plebeian, the plebeians went out and seized him and threw him from the Tarpeian rock. But there came later a swinging to the other side. In the later republic emphasis is on the individual life, until, in Cicero's time, the standard writer on Roman criminal law says that, just as at common law a dog is entitled to one bite, a citizen was entitled to commit at least one murder with impunity. Then under the empire the balance swung back again to the general security. Again we see in the Middle Ages the mediating agency of the benefit of clergy; anybody who could read could commit one felony with impunity. That was followed by a strict, drastic criminal law, and that in turn by the over-emphasis on the individual life in the 18th and 19th Centuries, embedded in our Constitutions and Bills of Rights. As the colored clergyman said, he was going to pile hyperbole on hyperbole, so we pile guarantee on guarantee, and to-day the swing is back to the general security. We hear a great outcry about coddling criminals. But the whole tendency is toward the justice of the 17th Century—the justice of the Tudors and the Stuarts. We have then this difficulty in our criminal law, involved in all social control—the difficulty of a balance between the general security and the individual life. Then there is no less difficulty involved in social control by law because law operates by generalizations, by rules, and by abstractions, and unhappily human conduct does

not lend itself entirely to generalizations and rules and abstractions. Bergson would say that human conduct is in time, and while things in space repeat themselves, things in time do not. At any rate, there is a unique element in human conduct that does not lend itself to abstractions and rules and generalizations; and just as there has been this swinging backward and forward between the stress on individual life and the stress on general security, there has been a like swinging backward and forward between strict rules strictly applied and judicial discretion, whereby justice may be tempered to an individual human offender.

Not only are there these difficulties in all social control by law, but there is an especial difficulty in legal social control in a time of change. We think of law commonly as a mass of rules, an aggregate of rules; but I undertake to say that just as authoritative as those rules are is another element, namely, what we might call the received ideals of the bench and the bar and the juristic writers—the received ideals of the profession, the picture in the mind of bench and bar of an ideal social order, of what the law is for, of what we are trying to achieve through social control. These pictures form a most important element in all that goes on in the administration of justice. Let me give you an illustration of how much depends on one's picture of things as they ought to be. A great English judge not so far back in the history of English law was discussing limitations on legislative power, and he said in effect, "Yes, it is true there are some things which Parliament cannot do, but there is one thing which Parliament can do (referring to the well known Enoch Arden situation); Parliament may enact that A, who is the wife of B, shall, after a certain day no longer be the wife of B, but the wife of C." An American judge had occasion to discuss the same subject and he also agreed that there were certain limitations on legislative power, and one limitation was, he said, no power on earth could enact that A, who was the wife of B, should after a certain date be the wife of C. That would not be tolerated in any civilized land. I had occasion to deliver a lecture last year in which I mentioned these conflicting opinions among great judges, and a judge in a neighboring state wrote me an indignant letter. He said, "Such a thing as you describe would not be tolerated in any Christian, civilized land." I had to write and remind him that in Canada to-day just such statutes are enacted, that exactly such a law was enacted in Indiana in 1842, and that in the State in which he is an ornament of the bench such legislation was enacted as late as 1857. I suspect that Indiana was a Christian state before 1842, and that the Christianization and civilization of Rhode Island took place sometime prior to 1857. But, as Mark Twain said about the judgment of Solomon, it all lies in the way that Solomon was raised. If one is raised with a certain picture, if the bar and the bench have a certain picture before them, a great deal is going to result from projecting legal rules on the background of those received ideals. At a time when ideals are changing, the effect on the administration of justice is likely to be a profound one, and I just wish to suggest two things in passing about our received ideals. One is one that I have harped on a good many times, that about 1920 we had pretty definitely changed from the rural, agricultural society, for which our pictures of justice were made, to the urban, industrial society in which we are living. The other thing is that our

legal ideals, our received ideals, are the ideals of a competitive society in which the individual is expected to find his place for himself, by free self-assertion, and the society in which we are living, or coming to live, is rather a co-operative society in which we are not freely competing, but are co-operating. I can hear somebody say "socialism". But I suspect that those 19th Century terms, individualism and socialism, have come to be nothing more than conventional labels. When I speak on that subject to a sensitive audience I am apt to talk about Personalism and Transpersonalism. Those are innocent terms, and the only reaction I ever got from their use was from a stenographer who once took down my address, and as I talked about personalism and transpersonalism, she wiped a handkerchief across her fevered brow, and said "Gee, Dr. Pound, you do use highbrow words!" But what I want to suggest is this: Take a community such as that in which you live in New York. How many inhabitants are freely competing with their neighbors, and how many are on salary with large organizations, co-operating with their fellow employees in a great enterprise? In a feudal state, which was a co-operative society, a man's greatness was not in what he did; it was in the greatness of the lord whom he served. Take down "Who's Who" and look at the great men whose names are printed there and see how many of them are recorded as having done anything, and how many express their greatness in the long list of the corporations in which they are trustees, directors and officers. Ask yourselves what has the place in modern society which land held in the Middle Ages. It is business, is it not? When a business gets big enough to be worth anything, the first thing the owner does is to transfer the business to a corporation, and take shares in return. The individual enterprise becomes a co-operative one. That change is a profound one which has been going on silently beneath the surface for a long time, and it has begun profoundly to affect the administration of justice.

When we come to securing social interests through the criminal law we come on another set of difficulties. These claim a thought or two in passing. Some of these difficulties in the administration of justice, in securing social interests through the criminal law, have been suggested. Another is a certain condition of internal contradiction in criminal law itself. Criminal law had its very origin in certain limitations, an official, magisterial maintenance of the general security, and so we have two elements in criminal law which are constantly at warfare with each other. I do not think we shall ever be able to get away from that condition of internal contradiction because it expresses that same need of balance between dominance and compliance, between the general security and the individual life, of which I have spoken.

Let us ask ourselves something about the different aspects of this subject, crime and the law. Suppose we begin at the beginning, and start with a definition of the items of conduct which the law prohibits, which it brands as criminal; then I suppose the next item is prevention, and the next item I suppose is detection and investigation; then prosecution, and then penal treatment. Obviously one cannot go over all of these; any one of them is good for a whole evening. Out of these, the items which deserve particular emphasis in this connection in which we are engaged to-night are prevention and penal treatment. Prevention I have discussed in an address I delivered some years ago, called "Preventive Justice". Mr.

Clark excluded it in the program he laid out for me, and I accept his suggestion. But I think that what is most germane to the program he has laid out in connection with penal treatment is the definition of the items of anti-social conduct, and I especially incline to speak of penal treatment and anti-social conduct, as being perhaps the equivalent in juristic terminology of the title, Crime and the Law, which was laid down for me. Yet in doing this there are many ways of approach. The mode of approach I am going to suggest to you is what we used to call the "causes of crime". I suppose we are not allowed to talk of the causes of crime nowadays. I do not like to talk about the "factors of anti-social conduct". Let us use the old-fashioned phrase, the causes of crime, remembering that it is not the most scientific terminology.

What have we got to look at, lying behind the courses of anti-social conduct, or what the law takes to be anti-social conduct, which are branded as criminal by politically organized society? I suppose, to begin with, we have got to look at the matter psychologically. To come back to the old problem of the balance between dominance and compliance, what we are trying to do is to weight the scales on the side of compliance. We are trying to set up some engine, some machinery, that will assure more compliance in certain lines of conduct. Of course the older theory, which is perhaps still called the classical theory, is a metaphysical one, that there is a certain equivalent of penalty appropriate to any item of wrongdoing; that when the balance of right and wrong was disturbed, a penalty put in the scale on the side of right would restore the balance. Our legislatures carried that out in very minute detail in the degrees of crime, each degree with its appropriate penalty. We gave that theory up a good while ago, and then came the era of social utilitarianism, with its program of reformation in schools and prisons. The latest careful study of the workings of these institutions has considerably shrunk our faith in them as they have come to be under the crowded conditions of to-day, so that I suppose the conception which is orthodox among jurists of to-day is simply one of trying to weight the scales on the side of compliance by such treatment as will tend to deter that particular person from committing the same offense, or other people from committing a like offense. There is one set of factors, psychological in their broad sense, as to which certainly a good deal can be said for the conception of deterrence.

But there is another factor which might be called in a narrow sense biological. There is no doubt that there are a number of persons who come into the mill of criminal justice who are laboring under certain defects that make them more liable to suggestion or predispose them towards acts which the law pronounces anti-social. Perhaps the physicians, the alienists, the psychiatrists, have been mostly impressed with these persons. Mr. Darrow's argument very largely is based upon these by no means unimportant elements in those who come within the realm of penal treatment. What I want to suggest is this, that those who have made careful studies of prison populations have been impressed by the circumstances that the mill-run of those who encounter the criminal law are perfectly normal. As Kipling's soldier said about the British tommy:

"We ain't no thin red 'eroes, and we ain't no blackguards, too,

But single men in barracks, most remarkable like you".

It is clear when you come to look at the run of criminal prosecutions that you are dealing with a great mass of normal persons. The bulk of prosecution is for violation of traffic rules. You were reminded earlier in the evening that almost any of us are liable to commit that offense. The significant thing is that in the urban industrial civilization of to-day more and more it becomes necessary in order to obtain a balance of order to take these police offenses, as they were termed formerly, and raise them sometimes even to the degree of felony, and we are not unlikely to find in the category of felon a person who is a perfectly normal one.

There is another line of causes that are economic. I was very much interested a few days ago in receiving a report which has been very carefully compiled, showing the relation between certain types of offenses and unemployment. Figures on unemployment going back to the '80's are available in one of our states, and in that state there are excellent statistics as to crime; and it is remarkable that offenses against property go up and down in almost exact coincidence with the rise and fall¹ in unemployment. There is another thing more significant in those figures, that when we get rises of a certain speculative nature, offenses against fiduciary relations increase in exact proportion and go down with the subsidence of that speculative fever. In other words, it is possible to have an economic overweighting of the scale on the side of dominance. When for any reason lawbreaking becomes highly profitable in a competitive social order in which success is measured by competitive acquisition, it becomes increasingly difficult to resist the temptation to break over the lines laid down by the criminal law. There I suspect, on that side of causes of anti-social conduct, we have a field where the orthodox theory of deterrence is thoroughly effective. We have to weight the scale on the side of compliance by these deterrents, and the more effectively they are administered, the more likely that the tendency to dominance will be outweighed.

Then there are other causes, for example, the political causes which have been referred to by Mr. Clark. It not infrequently happens that legislation in its wisdom pronounces some items of human conduct criminal which the second thought of the community is not disposed to regard as sufficiently serious. To impose penalties on something which the community on its second thought is not inclined to agree as deserving such penal treatment is likely to encourage wrong conduct in other ways that the community is inclined to think requires strict adherence. I simply remind you of the legislation in many of our western states in the first decade of the present century, making it a serious offense to possess, or sell, or give away cigarettes. Those laws never did anything except to make law in those communities a laughing-stock. Undoubtedly there is a danger right there in legislation overstepping the limits of effective legal action.

Then finally there are what I might call sporadic causes, that is to say, those factors which operate on a particular individual at a particular time and in a particular place, to lead one whose conduct is habitually social to do some anti-social act. There we have at one end the great category of those who commit traffic infractions, and at the other end a very large proportion of murderers who probably would never commit another murder in their lives, but under some particular circumstances did something which ordinarily they would shrink from. Those are the men, I suspect, whose backgrounds

involve factors which belong in the first great class of sporadic causes—that send to our prisons very considerable numbers of perfectly normal individuals for whom the orthodox theory of deterrence has its place. If you think that is exaggerated, I make one suggestion to you. See what happens when this regime of deterrence is suspended. We had a beautiful example of this at the time of the police strike in Boston. Pretty nearly the whole community turned out to smash the windows of stores on the main streets in Boston and take away everything they could lay their hands on. Respectable citizens were seen carrying away two or three pairs of shoes from a store, and this shows what can happen to normal individuals. Take again the example of times when it is considered important to suspend the ordinary guarantees of peace and order for visiting organizations, in order that they may have a good time. Usually the visitors behave themselves all right, but it is the citizens who run wild, as was demonstrated last week in Boston. If anyone thinks there is not a great value in this regime of deterrence, I call his attention to these phenomena. After all, the workability of our complex order is the best testimony to that regime. Much of everything that we have and everything we do presupposes the security of social interests, presupposes that we shall be free from aggression, presupposes the security of property and the security of transactions. If it were not for this regime of deterrence that weighs the scales on the side of compliance, could we expect any such complex, highly organized social order as the one under which we live? And so I would say to you that this theory of deterrence, this regime of penal treatment by way of deterring, granting it is not equal to all that is to be done, yet is equal to a very great part of the task of social control. I venture to say that the path of progress is not in any hampering of this system, but in adding to the regime of protective justice a highly developed preventive justice, and in developing and carrying out the systematic regime of individualized penal treatment that we have begun in this country through our institutions of juvenile courts, and indeterminate sentence, and probation. All those things, when they are carried out with the system, and the zeal and the intelligence which have characterized our development of the substantive criminal law, will make for an effective individualization of penal treatment.

Discussion

JOHN KIRKLAND CLARK, Esq.: I am sure we must all agree that, in the opening of this consideration of the subject of crime and its relation to society, we have been most fortunate in having so profound an analysis of what our criminal law is, its operation, and the benefits which are to be derived from the method in which it is now being applied. I trust that all of you will be sufficiently stimulated in your interest so that as these later meetings in this series of discussion of crime come on, you will, along with us, give your thought to solving this problem of crime and the State's treatment of it, and what is to be done, and I hope that the individual members of the community who have gathered here to-night to consider so abstract a subject as this will not only maintain their interest, but will go away and transfer to others with whom they come in contact the thoughts which we have heard set forth by this brilliant exponent of our subject this evening.

Colds Lead

The common cold is the most frequent cause of illness. It also accounts for far more days lost from work, from school, from production activities of every type, than can be charged to any other disease.

March, 1931

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The Good Effect of Carbon Dioxide on Arterial Peristalsis in the Course of Pneumonia

In the February issue of the MEDICAL TIMES AND LONG ISLAND MEDICAL JOURNAL Dr. John J. Wittmer, Medical Director of the Edison Companies, elucidated the manner in which carbon dioxide and oxygen combat the conditions operative in pneumonia. However, in the light of our knowledge concerning vascular peristalsis, and the specific influence upon it of carbon dioxide, it would seem that this influence, as a further favorable factor, must be taken into account. This additional and overlooked factor may indeed play a major rôle, and its clinical utilization may give us a controlling influence in the therapy of pneumonia. If our continued use of this new resource should be attended by a phenomenal reduction in the mortality of pneumonia, what we have postulated as a major curative factor may yet be conceded to overshadow in importance the factors adduced by Dr. Wittmer.

Dr. Charles S. Danzer has convincingly demonstrated the "peripheral vascular dynamic mechanism." His work, completed in 1919, and published in 1925, was done in the Physiological Laboratory and the Medical Clinic of the Johns Hopkins University (*Proceedings of the Society for Experimental Biology and Medicine*, 1925, xxii, pp. 217-221, and *Annals of Clinical Medicine*, Vol. III, No. 8, February, 1925). This was a brill-

iant culmination of the work of many predecessors, dating back to 1855 (Schiff: *Untersuch zur Physiol. des Nervensystems*, 1855, Bd. II, 147). Danzer cites thirty-eight references bearing upon the subject, from which we miss only the important book of R. M. Wilson ("The Hearts of Man," 1918), Starling's reference to the subject in his "Principles of Physiology," second edition, 1915, and a paper by Edward E. Cornwall (*Long Island Medical Journal*, December, 1924). Two papers which have appeared since Danzer published his work are Thomas C. Ely's study in the MEDICAL TIMES of April, 1930, and Edward E. Cornwall's suggestive contribution in the MEDICAL TIMES AND LONG ISLAND MEDICAL JOURNAL of February, 1931.

Danzer proved by a series of experiments that the circulation is maintained not alone by the classical and familiar factors (not fully adequate, in themselves, in any circumstances) but by the intrinsic, powerful action of the vascular walls themselves. His basic experiment consisted in ligating the bulbous arteriosus of the frog, whereupon, in about ten minutes, a tremendous filling and dilatation of the heart occurred, due to the active contractions of the peripheral vascular mechanism (arterioles, capillaries and venules). The steady stream of blood was visualized microscopically in the frog's web, tongue and nictitating membranes and oscillation of the corpuscular elements noted. In another experiment the aorta of a cat was clamped and yet a capillary circulation persisted in the ear. A frog's leg was ligated, nevertheless the capillary flow was still maintained in the foot; this occurred even after the leg was amputated. A subcutaneous artery in a frog's leg was ligated; the corpuscular stream could be seen in the capillary branches for some time after. A blood pressure cuff compressed the brachial artery in the human arm; the capillary circulation in the fingers continued for a while after this procedure.

Certain factors were found to inhibit the peripheral vascular dynamic mechanism, such as chloroform applied to the entire skin surface of the frog, injury (shock) of the cord, etc. The toxemia of pneumonia is presumably such a factor.

Bayliss (*Jour. Physiol.*, 1901, xxci, 32), cited by Danzer, perfused a frog's extremity with Ringer's solution saturated with carbon dioxide and found an increase of blood velocity to this part, due, undoubtedly, to the propulsive effect of the carbon dioxide.

Mares (quoted by Kautsky: *Pflüger's Archiv.*, 1918, Bd. clxxi, 386) exposed a frog to an atmosphere of carbon dioxide. "There occurred a constant weakening of the systolic contractions terminating in marked dilatation and cardiac paralysis. Although the cardiac force was constantly diminishing, some peripheral driving force kept constantly feeding blood into the heart, and this centripetal flow was maintained until there was no more blood left in the vessels."

This work of Bayliss and Mares shows that the carbon dioxide effect on the cardio-vascular system consists of a systo-diastolic action of the blood vessels associated with a marked swelling of the heart. "It is apparent, then," says Danzer, "that there is some dynamic force that keeps filling the heart after experimental aortic obstruction or exposure to carbon dioxide. That this force is not the cardiac vis a tergo, nor a momentum effect, has already been intimated. We believe that it is not a passive phenomenon, but an active driving vascular mechanism. Possibly it is the accumulation of carbon dioxide or other acids in the tissues following aortic ligation, which is accountable for the pumping mechanism of the peripheral vessels and the swelling

of the heart. The experiments of Bayliss, Schwartz and Lemberger (*Pflüger's Archiv.*, 1911, clxi, 149), and of Dale and Thacker (*Jour. Physiol.*, 1913, xlvi, 493), dealing with the effects of acids and carbon dioxide on vascular activity, make this conception not unlikely."

Just as Cesalpinus' discovery of the general circulation excited no particular interest until Harvey's "rediscovery," so the work of the pioneers in the field of arterial peristalsis has until now led to no widespread realization of its deep significance. But now that an understanding of certain pharmacological phenomena demand a taking into account of arterial peristalsis one may expect faster progress.

Prophetic of a new age of cardio-vascular therapy, demanding, among other things, inquiry as to the effects of such drugs as digitalis and strophanthus upon arterial peristalsis, was the work of Henderson and Lowe (*Deut. Archiv. f. Exper. Patho. u. Pharmakol.*, 1905, iii, 48), who performed experiments with caffeine upon the renal vein which reveal that this drug causes a pulsatory activity of the vessels—an "active pumping mechanism," and of Roberts (*Eng. Jour. Physiol.*, 1922, lvi, 101), who observed marked contraction and relaxation of the cerebral vessels after the intravenous injection of adrenalin in dogs. Above all, the elucidation of the real reason why carbon dioxide with oxygen successfully combats pneumonia, toxemia, shock, asphyxia, drowning phenomena, etc., will necessarily lead to a wide acceptance of the fact of vascular peristalsis as a commonplace in physiology. Then we shall begin to get more light upon another matter—the reason why, clinically, cardiac patients are frequently able to "carry on" very well indeed when the heart is obviously incapable of maintaining the circulation.

Wittmer notes the extreme circulatory impedance which exists in the congested area in pneumonia, and he cites the following conditions, among others, as ensuing upon the institution of the carbon dioxide-oxygen treatment: 1. A decrease in pulse rate and an increase in pulse pressure. 2. A definite tendency for the usual concomitant hypotension to rise. 3. Consolidated areas soon resolve, with the presence of large bubbling râles. Two effects, therefore, are directly achieved from this type of treatment which are illuminated by the data presented in this editorial: the efficiency of the general circulation is well maintained, despite toxemia, throughout the disease, and the pulmonary impedance is corrected.

Vitamin A and Infection

Green and Mellanby—*British Med. Jour.* 2:691 (Oct. 20), 1928—found that when young rats were fed on diets deficient in vitamin A they invariably died of some infective condition, such as: abscess at base of tongue, from 70 to 90 per cent; bronchopneumonia, 9 per cent; infection of the genito-urinary tract, 44 per cent; middle ear disease and septic nasal sinuses, 20 per cent; other seats of infection included the fallopian tubes, the lymphatics of the neck, the thyroid, the heart and the seminal vesicles. The administration of a diet rich in vitamin A cured such infections if the animals had not become too ill at the time when treatment was instituted. Believing that such facts must have some bearings on clinical conditions in human beings, these observers, two years ago, began to study the protective effect of vitamin A against human infections, and selected the puerperal type for experimentation. They attempted to find out whether the administration of this vitamin in the last month of gestation would lower puerperal sepsis, and whether this vitamin possessed curative power in puer-

peral septicemia after the diagnosis by blood culture. Their results, cautiously discussed by Mellanby in the *Journal of the American Association* (Jan. 31, 1931), suggest that vitamin A exerts prophylactic effects against local infection but are not conclusive as to whether this vitamin increases general resistance to a septicemia except indirectly by increasing local resistance. As to curative effects in actual sepsis (puerperal), a control of 22 cases gave a mortality of 92 per cent, while a vitamin A-treated group of 14 cases gave a mortality of 28.6 per cent.

In view of the deficiencies in the dietsaries of the public, this work suggests not only that much sepsis of all types is preventable, but that tinkering with infected sinuses and other types of local infection without taking such deficiencies into account merits severe criticism. In the obstetric sphere, it would seem that a further reduction of maternal mortality is eminently feasible.

A Progressive Note in Deafness Therapy

It is a heartening message that Doctor Hays sends to the deaf in this issue of the MEDICAL TIMES AND LONG ISLAND MEDICAL JOURNAL—and an admonishing message to the general practitioners who, from the author's point of view, have large responsibilities in cases of deafness. An aggressively optimistic note regarding deafness therapy is unusual and very welcome, but a reading of the paper will convince the reader that Doctor Hays' ideas and methods are thoroughly sound. Of particular interest is the pointing out of how much the general practitioner can do for deafness if he will carefully digest the principles laid down for him in this contribution.

The Real Basis of Leadership

All medicine has been divided by keen observers, not altogether cynically, into three parts—political, commercial and scientific. This division surely helps the realist to characterize, detachedly, the activities that he sees about him daily and to strengthen his conviction that nothing other than scientific achievement really matters. Amid all the lay ballyhoo about the reorganization of modern medicine, we should pin our hopes for greater and greater prestige to great advances in medical science, and no other attitude or course is likely to achieve better practical results. To the group which is yet to confer upon mankind greater and greater mastery over disease belongs the future. The figure of Prometheus, with his gift of fire, pales beside that of the imminent conqueror of cancer. The profession which has taught mankind how to master some of the worst scourges of the race deserves even now the greatest consideration. From those who understand, we receive such consideration; from the stupid and malicious, there are dangers to be apprehended. Yet who, upon the conquest of cancer, last of the great dragons, would dare to attempt the humiliation of the new Siegfried and his companions *in any degree?* Which among the voices of our obscene detractors would ever then be heard in the land again?

It is only with such weapons, rather than those used and suggested by our politically-minded colleagues, that we should resist the ill-willed, resentful enemies now closing in upon us.

Leadership as the mere gesture of strong personalities, however intriguing, has no real validity. It is derived power, the nature of which we have suggested, which stamps our spokesmen with the only genuine seal of authority. Without great achievement from the sci-

tific wing there can be no compelling leadership from the political wing.

Let us disillusion ourselves of everything that would obscure objectives the attainment of which will give us prestige greater than that of all others ranking below the gods themselves. Herein is much more than an unfulfilled wish for an arrogant place in the world, for the winning of the high goal at which we aim will lift from other men the curse of curses.

Our prayers for the discoverers who are the liberators.

Costs of Medical Care

Being at the center of national activities in every field (Washington, D. C.), the writer has been interested especially in the work of the Committee on the Cost of Medical Care and wonders if their conclusions will be as vague (and expensive) as those of the body that has spent so much time and money studying prohibition. "By their fruits ye shall know them." To the "Six Objectives," published in the last number of the MEDICAL TIMES AND LONG ISLAND MEDICAL JOURNAL, the writer humbly suggests the importance of adding a seventh—on which he has wasted much ink for several years. Having been connected with several New York hospitals for nearly half a century and a member of a board of governors for twenty-five years, he feels that he is entitled to speak ex cathedra.

It is impossible for laymen and doctors to advance the interests of their hospitals, and of their patients, unless they look at these questions from the same standpoint.

The writer has been connected with the Memorial Hospital since the corner-stone was laid and is proud to be still on the Consulting Staff. During his active service in that institution he was both an attending surgeon and a member of the Board of Governors, as were Drs. Cleveland, Bull and Coley. In that dual rôle we were fully supported by the lay members of the board. It was a great success and one is inclined to urge this plan upon all hospitals in New York and throughout the country.

As it is, the money question seems to be all important. Superintendents constantly are harassed by pressure from the laymen for more contributions and the doctor who sends in the most patients is apt to be held in the highest esteem, irrespective of his ability. As for the patients who wish to pay a moderate fee, their expenses for "extras" continue to mount, with the cost of private rooms, so that a conscientious doctor has not the heart to add to their troubles by charging even a moderate fee. The writer thanks God that he has freely given more than half of his time and strength to the poor; hence he is now himself "poor and proud"—especially poor. "A—bad business man," he is told. Granted, but he has had his reward in the lasting gratitude of patients who have no other gifts to offer.

This is a tough time for honest medical practitioners and, as an outsider, the writer feels the deepest sympathy for the younger generation, as well as an unbounded admiration for the young fellows who bravely embark on the long voyage toward so-called "success" in medicine, whatever that may mean in this commercial age.

We can not keep our standard too high, but—we must live.

This is frankly a personal confession. Doubtless it will be regarded as old-fashioned. Let it go at that.—H. C. C.

Miscellany

TRUTH IS STRANGER THAN FICTION

Or, Ain't Science Wonderful

(*A complete novel*)

Chapter I

JOLIET, Ill., Jan. 26 (A. P.)—Fifteen-year-old Lillian Fisher was recovering from an attack of infantile paralysis today with the blood of a parrot injected in her body through a misunderstanding.

Lillian was in a serious condition last Friday. The family physician called the Durand Hospital in Chicago and asked that a serum be sent. He returned to the Joliet Hospital saying he had been informed that serum was no longer used in such cases and that the latest thing was the injection of "parrot's blood."

There are not a great many parrots in Joliet, but hospital attachés finally found a woman who was willing to allow her bird to undergo the operation. It was given an anesthetic and five cubic centimeters of blood taken and injected intramuscularly into the girl.

Today, with both the girl and the parrot recovering, Dr. George Weaver, chief of staff of the Durand Hospital, heard about it. He said he doubted that the injection had helped the girl, but that he knew of nothing harmful in a parrot's blood.

"The doctor just misunderstood me," said Dr. Weaver. "I said 'parents' blood, not 'parrot's blood.'—Eve. World.

Chapter II

CHICAGO, Jan. 28—Physicians in St. Joseph's Hospital at Joliet will have parrot's blood analyzed to learn why it seems to be battling and conquering the infantile paralysis germ in the body of Lillian Fisher, fifteen, who was given parrot's blood injection by mistake.

The girl continued to improve today, but Chicago physicians insist the treatment be tried under scientific auspices.—Eve. World.

Chapter III

JOLIET, Ill., Jan. 28 (A. P.)—A steady improvement in the condition of Lillian Fisher, fifteen-year-old Joliet girl who recently was given an injection of parrot's blood through a misunderstanding, was reported by her physician today. He said there probably would be no need for another transfusion.

The misunderstanding arose when physicians thought that a Chicago doctor had recommended parrot's blood, whereas the Chicago physician reported that he had said "parents' blood," in a telephone conversation.—Eve. World.

On To-Day's Frontier

It is a naive people that will record the Schenectady massacre as one of the shudderful horrors of American history while automobile massacres of thousands are occurring around them and are regarded with relative indifference.

What is the difference between the tomahawking or capture of a child by an Indian in the old days and the crushing or maiming of one by an automobile to-day? The crushing is a new tomahawking; the maiming is surely a new captivity. For the Indian war-whoop substitute the honk of the automobile; for the occasional massacre of the old days substitute the efficiency of our daily holocaust, then add up the relative totals on a long term basis; for the Iroquois warrior, traveling to a powwow, substitute a Babbitt on his way to a deal; for

the savagery of the red man substitute the sentimentality of the modern killer.

The mother of to-day is not really far removed from the parent who lived in dread of Frontenac's painted demons. Her heart stands still at times for much the same reasons.

Yet we insist that we do not live in a wilderness to-day, and that there are no woods harboring drunken barbarians nor resounding with the dying cries of little children.

Correspondence

Physicians Testifying in Court Procedure

Editor THE MEDICAL TIMES:

In an article which appeared on January 29th, 1931, in the *New York Law Journal* by me, I made suggestions in regard to improving the procedure and practice in the Courts.

I deem that the medical profession will be interested in part of the same as it is in regard to taking testimony of the doctors in court procedure.

This is a matter of great importance to the doctors as they dread the loss of time waiting in courts, the interference with their hospital practice attending patients and the loss of time attending courts and loss of compensation if they are brought to testify under bench warrant, and often the compensation is not adequate for the time lost.

Part of my recommendation which will interest the doctors is as follows:

"Expert witnesses should be examined before the clerk by both attorneys and the testimony taken on a dictaphone and the record turned on at the time of the trial on a victrola or other sound producing phonograph. This would allow doctors to attend their hospitals and patients and thus devote their energies to the proper channels of attending the ills of humanity for which they have studied and thus prevent them from wasting their time in a court room while patients are neglected. Doctors would be more willing to testify as it would not interfere with their practice. Less time would be wasted by the court waiting for the doctor to appear, and thus eliminate the injustice done a litigant by having the doctor fail to appear or possibly appearing after the case is submitted to the jury, or compelling the court to issue a bench warrant to compel the witness' appearance. The foregoing also applies to mechanics in automobile cases or real estate men called as experts. As a matter of fact, a plaintiff should have the privilege to present all his witnesses in the same manner and his testimony recorded as above upon notice to the attorney for the defendant allowing them to take his exceptions. The court could turn on all the records and hear the testimony without any witnesses waiting around to be called."

If you deem there is merit to the above, I suggest that you make some effort to secure the reform and legislation to that effect.

* * * * * Yours truly,

EDWARD BURKE.

Brooklyn, N. Y., January 30, 1931.

ASSOCIATED PHYSICIANS OF LONG ISLAND

Minutes of the Thirty-third Annual Meeting at the Methodist Episcopal Hospital, Brooklyn, N. Y., Saturday, January 31st, 1931

The Thirty-third Annual Meeting (Ninety-eighth Regular Meeting) of the Associated Physicians of Long Island was held at the Methodist Episcopal Hospital, Brooklyn, N. Y., Saturday, January 31st, 1931, and was attended by fifty-one guests and members. Surgical, Medical and X-ray Clinics were held during the morning and luncheon was served at one o'clock. The Business Session, with the President, Dr. Charles H. Goodrich, Brooklyn, N. Y., presiding, was called to order at two o'clock. As the minutes of the last meeting had been published in the *Long Island Medical Journal* the reading was dispensed with, by general consent. The Membership Committee, Dr. Harold R. Merwarth, Brooklyn, N. Y., Chairman, presented the names of the following applicants for membership and they were unanimously elected to membership:

Proposed by Dr. William Browning—Dr. Kenneth Gabriel Jennings, Brooklyn, N. Y., University and Bellevue (Bellevue), 1922; Dr. Maurice J. Dattlebaum, Brooklyn, N. Y., College of

Physicians and Surgeons, New York, N. Y., 1904; Dr. Henry M. Feinblatt, Brooklyn, N. Y., Long Island College Hospital, 1913; Dr. Gerard Kasper, Brooklyn, N. Y., Long Island College Hospital, 1905; Dr. John F. Raycroft, Brooklyn, N. Y., Long Island College Hospital, 1920; Dr. Edward Ambrose Keyes, Brooklyn, N. Y., Long Island College Hospital, 1911.

Proposed by Dr. Warren Irving Titus—Dr. James Wesley Bulmer, Glen Cove, N. Y., College Physicians and Surgeons, New York, N. Y., 1921.

Proposed by Dr. Henry Flack Graham—Dr. Pedro Platou, Brooklyn, N. Y., Long Island College Hospital, 1920.

Dr. William H. Ross, Brentwood, N. Y., presented a short report from the Publication Committee which was ordered received and filed.

The following report from the Historical Committee was presented by Dr. Joseph Raphael, Chairman, and was ordered received and filed:

Necrology

Associated Physicians of Long Island—1930
A. S. Ambler, M. D., College Point, N. Y.; July 25, 1930.
James S. Ames, M. D., Babylon, N. Y.; November, 1930.
Charles A. Bacon, M. D., Brooklyn, N. Y.; December 10, 1930.
Bruno W. Bierbauer, M. D., Brooklyn, N. Y.; April 19, 1930.
H. Beeckman Delatour, M. D., Brooklyn, N. Y.; August 23, 1930.
Murrett F. DeLorme, M. D., Brooklyn, N. Y.; September 8, 1930.
Horace G. Dunham, M. D., Brooklyn, N. Y.; December 6, 1930.
Mathias Figueira, M. D., Brooklyn, N. Y.; July 6, 1930.
Cornelius E. Hagan, Brooklyn, N. Y.; July 24, 1930.
Alton S. Henderson, M. D., Huntington, N. Y.; June 20, 1930.
J. Ensor Hutcheson, M. D., Rockville Center, N. Y.; August 16, 1930.
Walter Lindsay, Huntington, N. Y. (Emeritus) May 7, 1930.
George A. Linnehan, M. D., Jamaica, N. Y.; January 2, 1930.
Charles H. Ludlum, M. D., Hempstead, N. Y.; October 11, 1930.
Fiore C. Luongo, M. D., Brooklyn, N. Y.; July 10, 1930.
Edson H. Lutze, M. D., Brooklyn, N. Y.; December 7, 1930.
Cecil MacCoy, M. D., Brooklyn, N. Y.; May 30, 1930.
Griswold D. Nammack, M. D., Far Rockaway, N. Y.; December 19, 1930.
Charles P. Peterman, M. D., Brooklyn, N. Y.; October 6, 1930.

George A. Powers, M. D., Brooklyn, N. Y.; March 12, 1930.
Walter S. Rink, M. D., Brooklyn, N. Y.; April 26, 1930.
C. A. Ross, M. D., Queens Village, N. Y.; October 13, 1930.
Robert Scrimgeour, M. D., Brooklyn, N. Y.; November 17, 1930.

James E. Shuttleworth, M. D., Richmond Hill, N. Y.; December 26, 1930.

Ernest E. Smith, M. D., Kew Gardens, N. Y.; December 5, 1930.

John S. Wood, M. D., Brooklyn, N. Y.; April 3, 1930.

Report of the Secretary: Mr. President—Your Secretary has to report that the usual meetings have been held during the year 1930 and, while not as well attended as we might wish, they have been enjoyable and profitable to those who did attend. The present membership is 805, 511 from Kings County, 288 from Queens, Nassau and Suffolk Counties and 6 Honorary Members. 44 new members have been added to the roster and there have been 17 resignations. There have been 28 deaths of active members during the year 1930.

Respectfully submitted,

JAMES COLE HANCOCK, Secretary.

Report of the Treasurer:

FINANCIAL STATEMENT
of the *Long Island Medical Journal* and the Associated Physicians of Long Island, as of December 31, 1930.

Receipts	
On hand January 1, 1930	\$ 367.23
Dues	4,027.50
Advertising	3,611.74
Subscriptions	43.75
M. S. C. K. (Library Journals)	1,842.30
Reprints	1,252.07
Miscellaneous	33.33
	10,810.69
Total	\$11,177.92

Expenditures

L. I. M. J. (printing)	\$ 6,382.97
Editorial & Business office	176.72
Secretary's office	396.09
Salary Bus. Mgr.	2,033.33

(Concluded on ad. page 20)

Accepted by
The Council on Pharmacy and Chemistry
A. M. A.

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Methenamine
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A Potassium-free
Organic Iodide
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A Real Milk Modifier

accomplishing more than supplying maltose and dextrins in building up the carbohydrate content of a baby's diet—*important as this is acknowledged to be*—for Mellin's Food assists materially in the digestion of milk by changing the physical condition of the coagulated casein into a soft, flocculent, sponge-like curd, readily permeated by the fluids of the stomach and incapable of forming in tough, tenacious masses.

It is a matter of common knowledge that the chief obstacle to surmount in the management of an infant's diet is the trouble most babies have in digesting the casein portion of milk protein, so the fact that Mellin's Food overcomes this difficulty is a long step toward simplifying infant feeding, for other necessary adjustments are relatively easy.

Literature and samples sent to physicians
upon request—carrying charges prepaid.

Mellin's Food Company

Boston, Mass.

(Concluded from text page 126)

Postage & Express	70.00
Telephone & telegraph	2.75
Reprints	1,790.44
Miscellaneous	214.75
	\$11,067.05
Balance on hand, December 31, 1930	110.87
Total	\$11,177.92

This report was ordered received and filed when audited. Dr. William Browning moved, and the motion was seconded and carried, that The ex-Presidents of the Associated Physicians of Long Island be constituted a Committee on Plan and Relations. The Nominating Committee, Dr. Joshua Marsden Van Cott, Chairman, presented the following nominations for the officers of the Society for the Year 1931:

President, Dr. Henry C. Courten, Richmond Hill, N. Y.; First Vice-President, Dr. William J. Malcolm, Jericho, N. Y.; Second Vice-President, Dr. Jacques Cortelyou Rushmore, Brooklyn, N. Y.; Third Vice-President, Dr. George H. Schenck, Southampton, N. Y.; Fourth Vice-President, Dr. Joseph S. Thomas, Flushing, N. Y.; Secretary, Dr. James Cole Hancock, Brooklyn, N. Y.; Treasurer, Dr. John Leopold Bauer, Brooklyn, N. Y.

All the above were unanimously elected.

A quorum was present. Thanks were voted the hospital and medical staff.

The Scientific Session was called to order by the Chairman, Dr. Howard T. Langworthy, Brooklyn, N. Y., and the following Scientific Program was presented:

EIGHTEEN FIVE-MINUTE PAPERS OR REPORTS

1. The Diagnosis of Acute Osteo-Myelitis.—Dr. H. K. Bell.
2. The Arsphenamines in Syphilis.—Dr. John C. Graham.
3. Is Spinal Anesthesia a Plaything or a Necessity?—Dr. Henry F. Graham.
4. Case Report: Dislocation of a Cervical Vertebra.—Dr. Donald E. McKenna.
5. Prevalent Hypothyroid Manifestations.—Dr. Irving L. Cabot.
6. An Unusual Case of Rectal Hemorrhage.—Dr. Seymour Clark.
7. Maternal Mortality in 15,000 Cases of Midwifery at the Methodist Hospital.—Dr. H. W. Mayes.
8. Gastro-Enterostomy. An Unusual Complication.—Dr. Russell S. Fowler.
9. Moving Picture: Simple Procedures in Infants.—Dr. Walter Watton.
10. Contrasting Types of Cardiac Dyspnea.—Dr. Frank B. Cross.
11. An Acidotic Type of Dyspnea.—Dr. A. T. Mays.
12. Statistical Review of Accidental Hemorrhage in 10,000 Cases of Pregnancy at Methodist Hospital.—Dr. Harvey B. Matthews.
13. Hemochromatosis.—Dr. E. B. Smith.
14. Volvulus of the Cecum.—Dr. Pierre Renaud.
15. Cerebral Hemorrhage of the New Born.—Dr. Walter R. Coles.
16. Thrombophlebitis Following Tonsillectomy.—Dr. Charles A. Anderson.
17. Tumor of the Frontal Lobe—Case Presentation.—Dr. Harold R. Merwarth.
18. Roentgen Diagnosis of Gall-Bladder Disease.—Dr. George W. Cramp.

H. D. LANGWORTHY, M. D.,
Chairman.

An informal reception was held at the Montauk Club and later dinner was served at the club. After the dinner addresses were made by the President, Dr. Charles H. Goodrich, Brooklyn, N. Y., Dr. William H. Ross, Brentwood, N. Y., President of the Medical Society of the State of New York, and Dr. Henry C. Courten, Richmond Hill, the incoming President. A very interesting and instructive illustrated address was given on the subject, The Oyster and Oyster Culture, by Dr. Herbert D. Pease. This was followed by an address, with moving pictures, on the same subject, by Mr. H. W. Beach, of New Haven, Connecticut.

JAMES COLE HANCOCK, Secretary.

Commercially Prepared Infant Foods

It is gratifying to learn that recent investigations of commercially prepared infant foods indicate that practically all products on the market at the present time meet high sanitary standards. Manufacturers are apparently devoting their efforts to market products prepared under the best possible sanitary conditions.—Editorial *J. A. M. A.*, Jan. 3, 1931.

SEMINAR IN PHYSICAL THERAPY

Given Under the Auspices of the New York Physical Therapy Society Consisting of Didactic Lectures and Clinical Demonstrations

March

4th—8:30 P.M.	Massage. Dr. Ralph Pemberton, Physician to Presbyterian Hospital, Philadelphia, Associate Professor of Medicine in the Graduate School of the University of Pennsylvania.
11th—3:30-5:00 P.M.	Physics of Medical Electricity. H. J. Holmquest, B.S., M.E., Formerly Secretary of Council on Physical Therapy of A. M. A., Chicago.
18th—3:30-5:00 P.M.	Electro-Static Therapy. Dr. William D. McFee, Director, Department of Physical Therapy, Boston City Hospital, Boston.
25th—3:30-5:00 P.M.	Low Voltage Currents. Dr. Frank H. Krusen, Director, Dept. of Physical Therapy of Samaritan Hospital and Associate Dean of Temple University, Philadelphia.
1st—8:30 P.M.	April
8th—3:30-5:00 P.M.	Physical Therapy in Fractures. Dr. Clay Ray Murray, Assistant Professor of Surgery, College of Physicians and Surgeons, Columbia University.
15th—3:30-5:00 P.M.	Medical Diathermy. Dr. Harry Eaton Stewart, Director, New Haven School of Physical Therapy, New Haven, Conn.
22nd—3:30-5:00 P.M.	Surgical Diathermy. Dr. William Schmidt, St. Mary's Hospital, Philadelphia, Pa.
29th—3:30-5:00 P.M.	Hydrotherapy. Dr. Joseph B. Nylin, Chief of Clinic, Department of Physical Therapy, University of Pennsylvania, Professor in Physical Therapy, Women's Medical College, Philadelphia, Pa.
6th—8:30 P.M.	Physical Therapy in Urology. Dr. F. G. Harrison, Associate Professor of Urology, Graduate School of Medicine, University of Pennsylvania, Associate G. U. Surgeon, Presbyterian Hospital, Philadelphia, Pa.
13th—3:30-5:00 P.M.	May
20th—3:30-5:00 P.M.	Indications and Contraindications of X-ray Radiation. Dr. Francis Carter Wood, St. Luke's Hospital, New York.
27th—3:30-5:00 P.M.	Treatment of Cutaneous Cancer and Pre-cancerous Lesions. Dr. George Millar MacKee.
	Physical Therapy in Orthopedics. Dr. Walter I. Galland, Assistant Orthopedist, Joint Diseases and Lenox Hill Hospitals.
	Physical Therapy in Gynaecology. Dr. Grant E. Ward, Baltimore.
	Posture as a Therapeutic Procedure. Dr. Royal Storr Haynes, New York.
	Posture and Exercise in Adults. Dr. K. G. Hansson, Director of Physical Therapy Dept., Hospital of Ruptured and Crippled, New York.

The Bond Between Doctor and Patient

Any reorganization of the medical profession that threatens the personal bond between doctor and patient is to be viewed with suspicion, even if the object appears at first sight to be more thorough and careful practice. With the exception of the relationship that one may have with a member of one's family, or with the priest, there is no human bond that is closer than that between physician and patient (or patient's family), and attempts to substitute the methods of machine or organization, be they ever so efficient, are bound to fail.—F. W. Peabody, *Doctor and Patient*, New York, Macmillan Company, 1930.

MEDICAL BOOK NEWS

Edited by WILLIAM HENRY DONNELLY, M.D.

All books for review and communications concerning Book News should be addressed to the Editor of this department at 1313 Bedford Avenue, Brooklyn, New York.

MARCH

REVIEWS

Text-Book of Medicine

A TEXT-BOOK OF MEDICINE. By American Authors. Second edition revised and edited by Russell L. Cecil, A.B., M.D. Philadelphia and London, W. B. Saunders Company, 1930. 1502 pages. 8vo. Cloth, \$9.00.

When the first edition of Osler's text-book of medicine appeared many years ago, a great addition was made to the subject both for the practitioner and the student, for in a single volume were given the essentials of all diseases, each discussion embracing the history, the pathology, and all of the known facts as to symptoms and clinical findings, laboratory data and treatment. Probably at that time there was no other in the entire medical world who could command as many hands as were necessary to get his facts and figures, and certainly no other had the peculiar knowledge and type of mind to conceive and execute such an undertaking. For almost a quarter of a century this book revised in its several editions had no peer, and it is in fact the frame-work on which such a book should be laid.

And in twenty-five years so much has been added to just the rudiments of our knowledge, Osler himself with his master mind, could not possibly in this day repeat his past performance. In 1927 Cecil using more or less the form of the predecessor, marshalled a hundred and twenty and more of the leading men of the profession, and edited their work, publishing it in a single volume. Thus was offered a book in which the writings of many minds were recorded and these presided over by the two editors. What they offered really was a system of medicine in a single volume, and their work was a remarkable success.

In this, the second edition, the old plates of the first have been entirely discarded, and the book is completely reset, and largely rewritten. For the student, whether intra or extramural, there is to date no single medical volume which will give so much of the facts, in so well ordered a manner, and it is a book which any doctor should be glad to own, and which it will do with benefit. For the man who has little time the essentials are given, and if he has time for further reading the bibliographies are numerous and replete.

L. C. JOHNSON.

Allergic Diseases

ALLERGIC DISEASES, THEIR DIAGNOSIS AND TREATMENT. By Ray M. Balyeat, M.A., M.D., F.A.C.P. Third edition. Philadelphia, F. A. Davis Company, 1930. 395 pages, illustrated. 8vo. Cloth, \$5.00.

In the 3rd edition of this book, Balyeat attempts to enlarge the scope of his earlier surveys of the subject. Urticaria, migraine, eczema, colitis and epilepsy are dealt with in addition to those more common forms of allergy, hay fever and asthma. The recent developments in the diagnosis and treatment of these conditions are also included in this new edition.

All these factors make this volume much more valuable to the practitioner who is seeking an elementary exposition of the subject. Because of its larger size and greater completeness, however, this work loses its simplicity, which originally was its most valuable asset. It has become too detailed and too expensive for the use of the average patient. It is to be hoped that the previous smaller edition will still remain available for this purpose.

M. W.

Textbook of Physiology

A TEXTBOOK OF PHYSIOLOGY. By William D. Zoethout, Ph.D. 3rd Edition. St. Louis, The C. V. Mosby Company, 1928. 664 pages, illustrated. 8vo. Cloth, \$4.50.

This text was written primarily to answer the needs of students in Dental, Pharmacy and Normal schools whose limited curricula would naturally preclude the use of the larger, more exhaustive works on Physiology. To bridge the gap, the author

says, between the brief, elementary (and often useless) texts and the more detailed and cumbersome treatises has been his aim in preparing the present work. This edition (the third) has been revised so as to include recent advances in the physiology of muscle as well as some modern conceptions regarding vitamins and internal secretions. Believing that rational personal hygiene should be a natural corollary of a knowledge of physiology, the author has devoted a considerable part of the book to a discussion of nutrition, physical exercise, mental work and fatigue.

FRANK E. MALLON.

A Primer for Diabetic Patients

A PRIMER FOR DIABETIC PATIENTS. By Russell M. Wilder, M.D. Fourth edition. Philadelphia and London, W. B. Saunders Company, 1930. 188 pages, illustrated. 12mo. Cloth, \$1.50.

This is the fourth edition of the primer, and the statement of the author that since the appearance of the last edition, the three years that have followed have added little to necessitate revision is significant and, coming from him, has importance. His little book is a primer only in that it is a small book. And the size is determined by the amount of material included in many other manuals which Doctor Wilder chooses to omit. He has written only for the patient, to whom he gives a remarkably clear statement of the causes of diabetes, the aim in treatment, the dangers and pit-falls, and he has illustrated the text with sufficient charts and pictures. He gives a minimum of tables, a maximum of recipes, and yet all of the necessary details for rationing and substitution in diets. It is a good little primer; a brief word, but a mighty one.

L. C. JOHNSON.

Nutrition and Diet Therapy

NUTRITION AND DIET THERAPY. A Textbook of Dietetics. By Fairfax T. Proudfit. Fifth edition. New York, The Macmillan Company, 1930. 708 pages. 8vo. Cloth, \$2.75.

It is an excellent text-book for the dietitian, with an elementary introduction to the physiology of nutrition. Much space is devoted to infant and child feeding, normal and pathological. Another section deals with the diets of all the diseases in internal medicine, concerning itself especially with the preparation of menus and recipes. The remainder of the book is a cook book with much technical advice for the dietitian.

WILLIAM S. COLLENS.

Text-Book of Histology

A TEXT-BOOK OF HISTOLOGY. By Harvey Ernest Jordan, A.M. Fifth edition. New York and London, D. Appleton and Company, 1930. 857 pages, illustrated. 8vo. Cloth, \$7.00.

Again the author has in this fifth edition produced a complete volume of Histological Facts based on his personal studies. The text is remarkably fortified with elaborate micro-photographic illustrations, and diagrams, so essential toward relieving the difficulties of the average student. This edition is more complete than the previous edition because the chapter on blood has been thoroughly revised, as far as microscopic anatomy of blood as a tissue. Recent additions were made to this volume from modern investigations of other authors.

The writer has spared no efforts in compiling the sections on genital organs and the ductless glands, or endocrine glands, which are thoroughly described both histologically and physiologically. The necessary touches of embryology are interesting and timely.

The volume with its added subject matter, maintains the high standard of previous editions, and the author should be commended for his untiring efforts.

NATHAN REIBSTEIN.

Medical Jurisprudence

MEDICAL JURISPRUDENCE: A STATEMENT OF THE LAW OF FORENSIC MEDICINE. By Elmer D. Brothers, B.S., LL.B. Third edition. St. Louis, C. V. Mosby Company, 1930. 300 pages. 8 vo. Cloth, \$3.50.

This work furnishes a satisfactory text on medical jurisprudence for both the student and practitioner. The expositions are sufficiently complete and fundamental principles are accurately elucidated. Abridgment and condensation are judiciously employed. The work covers a wide range and holds a very definite and valuable place in its important field.

A. C. J.

Diseases of the Ear

DISEASES OF THE EAR. By Philip D. Kerrison, M.D. Fourth edition. Philadelphia and London, J. B. Lippincott Company, 1930. 627 pages, illustrated. 8vo. Cloth, \$7.50.

The fourth edition of this classical work on otology will undoubtedly enhance its popularity. The author very appropriately begins with a description of the anatomy and physiology of the sound-conducting apparatus and gives us a clear comprehensive background of the otic diseases that are to be described in topographical order, i.e., beginning with the pinna and going inward. The subject matter is thoroughly and systematically presented in an easily assimilable manner, numerous beautiful illustrations facilitating the grasping of ideas already lucidly detailed. Dr. Kerrison is to be further complimented for allotting a new chapter to the consideration of the oral method of training the totally deaf child, a matter given too little attention by many otologists. This book may truly be called a reference book *par excellence* on otology.

G. J. B.

Physique and Intellect

PHYSIQUE AND INTELLECT. By Donald G. Paterson. New York, The Century Company, 1930. 304 pages, illustrated. 8vo. Cloth, \$2.50.

In conformity with the present trend of seeking constitutional anomalies as bases for organic diseases, Professor Paterson, a psychologist, has undertaken to interpret intellectual differences in terms of bodily changes. He first aims to dispel the mistaken notion that geniuses are often physical freaks and supports his contentions by the statistical observations of other workers. In fact he finds that some men such as Porter have chosen the opposite extreme of thought and have found that brighter children are taller and heavier. And so while he weighs these discordant observations he chooses a middle course which seems entirely convincing.

He finds that gifted children do not excel normal children in height; that cephalometry as a means of determining intelligence is not very satisfactory. And while the shapes and sizes of heads, except in extreme instances, have no bearing on mental aberrations he tells us that literature abounds in emphatic assertions that dolicocephaly implies mental superiority and brachycephaly, mental dullness.

He unconsciously supports Kaiser and the conservative wing of the profession when he proves that there are no harmful mental effects from diseased tonsils and adenoids. In a series of cases the I. Q. ratio was determined 6 mos. and 1 year after tonsil operation respectively, and found to be unchanged.

He discusses the apparent mental weaknesses in such conditions as hookworm and malnutrition and asserts that parasitic infestations and nutritional disturbances per se do not cause mental retardation unless there be disease or injury to the central nervous system.

This book is a splendid dissertation on the newer observations of body versus mind and aims to disprove the older contentions in a most convincing and scholarly fashion.

EMANUEL KRIMSKY.

Behavior of Young Children

THE BEHAVIOR OF YOUNG CHILDREN. By Ethel B. Waring and Marguerite Wilker. Edited by Patty Smith Hill. Volume I. New York, Charles Scribner's Sons, 1929. 121 pages. 12mo. Cloth, \$1.00. Volume II. Dressing—Toilet—Washing. By Ethel B. Waring and Marguerite Wilker. Edited by Patty Smith Hill. New York, Charles Scribner's Sons, 1930. 131 pages. 12mo. Cloth, \$1.00. (Series on Childhood Education).

The Introduction by Patty Smith Hill is, indeed, an important part of these little books.

This series of little books on child behavior (the first two available) is well done and deserves a place among larger works of this nature. It should prove of help to mothers as well as to teachers and governesses. Students of child psychology will find it invaluable.

Volume II is especially recommended to parents who think they know but whose methods have failed to produce the desired results. This little book will point out their errors by the examples cited.

HARRY APFEL.

Hieronymus Fracastorius

HIERONYMI FRACASTORII. De Contagione et Contagiosis Morbis et Eorum Curatione, Libri III. (Contagion, Contagious Diseases and Their Treatment.) Translation and Notes by Wilmer C. Wright, Ph.D. New York & London, G. P. Putnam's Sons, 1930. 356 pages. 12mo. Cloth, \$2.50. (History of Medicine Series No. II.)

This book is worth reading. Written nearly 400 years ago, in 1546, long before von Leeuwenhoek first described bacteria, Fracastorius presents a theory of contagion which stands intact to-day. He clearly recognizes the existence of germs, their multiplication within the body and describes transmission by direct and indirect contact and at a distance by air. His descriptions of some of the commoner diseases of the day, such as syphilis, tuberculosis, typhus, plague and rabies are accurate and in many cases he gives the method of transmission. Here and there is a touch of unconscious humor as when he states that syphilis is, in 1546, as prevalent in the New World as scabies in Italy. The chapters on therapeutics are of historic interest only.

Fracastorius stands revealed not only as the man who named syphilis, but as a physician of culture and keen observation and with a clear, incisive literary style unusual for his day. In an introductory chapter, the translator presents a detailed biography of his subject.

E. B. SMITH.

Merely the Patient

MERELY THE PATIENT. By Henry Howard Harper. New York, Minton, Balch & Company, 1930. 95 pages. 12mo. Cloth, \$1.00.

This little book carries a commendatory and witty foreword by Dr. Samuel W. Lambert, who thinks that both professional and lay readers should know its contents. It is one of a seemingly increasing number of books about medicine and medical men written from the articulate patient's point of view. This one is written along extremely simple lines, when compared, for example, with *The Layman Looks at Doctors*, by S. W. and J. T. Pierce (Harcourt, Brace and Company, 1929), and much humor and good will brighten its pages. It is an indictment of the sugar-coated type which does not leave a bad taste like some others. It is not to be forgotten that the most perfect presentation of the celebrated case of the Sick Man versus the Doctors is to be found in the late Dr. Francis W. Peabody's *Doctor and Patient* (The Macmillan Company, 1930), which, in our opinion, for insight, kindness and wisdom will never be eclipsed by the book of any layman.

A. C. J.

Immunität, Allergie und Infektionskrankheit

IMMUNITAT, ALLERGIE UND INFJEKTIONSKRANKHEITEN. Hrsg. von Rudolf Degkwitz et al. Schrifteinleitung, Dr. Fr. Michelsson. Band II, Heft 1/2, 3, 4/5, 6, 7/8, 9, 11/12 and 12. München, Aerztlichen Rundschau Otto Gimelin, 1929-1930. 367 pages. 8vo. Paper, Quarterly—Marks 5.00; Individual numbers—Marks, 2.00.

This journal continues its policy of presenting short, practical reviews of recent developments in the field of allergy and immunology.

Its articles are not too lengthy or technical. Among them are useful analyses of the value of various immunologic forms of therapy employed in the treatment of infectious illnesses.

Names well known in the field of immunology are found in the list of contributing authors. For the practicing physician who reads German, this journal is useful for keeping in touch with new developments in the various fields of immunology.

M. W.

Cancer of the Larynx

CANCER OF THE LARYNX. By Sir St. Clair Thomson, M.D. & Lionel College, M.B. New York, The Macmillan Company, 1930. 244 pages, illustrated. 8vo. Cloth, \$7.00.

The two hundred thirty-seven pages and numerous illustrations several of which are colored plates, constitute as comprehensive a treatise on Cancer of the Larynx as it is possible to assemble at this time. One can safely predict that very little of the text will require alteration as time goes on.

Both authors are well known as authorities in this field. Sir St. Clair Thomson has brought the operation of laryngofissure to its present state of simplicity and perfection after many years of concentrated effort upon this phase of the subject.

Not only the laryngologist and surgeon, but every physician will profit greatly by a perusal of this splendid volume. The authors have made clear the indications for the operations and have presented the entire subject of cancer of the larynx so lucidly and in such simple language that one is bound to learn a great deal from the pages of this work regardless of his previous knowledge and experience.

The authors and their publishers are rendering valuable service in presenting such a book upon this subject and are to be congratulated.

M. C. M.

Fads, Frauds and Physicians

FADS, FRAUDS AND PHYSICIANS: Diagnosis and Treatment of the Doctors' Dilemma. By T. Swann Harding. New York, The Dial Press, 1930. 400 pages. 8vo. Cloth, \$3.50.

This is a difficult book to read. The original of every quotation must be read in order to ascertain its relation to its context, and thus be able to interpret the interpreter, for the reviewer is sure that some are used by Harding to make a point for the case of state medicine, and in the process he has overlooked the educational and informational intent of the speaker at the time the words were used.

In the chapter entitled HOW SCIENTIFIC ARE OUR DOCTORS? the following is lifted out of its context as indicating Harding's point of view:

"Furthermore, the men of highest intelligence in the medical profession are not usually in active practice at all. Most of them are at research in laboratories of experimental medicine. Many others are specialists, or heads of departments, who consult rarely and see only the most unusual cases. Healing the layman is usually entrusted to the hands of the mental proletariat of the medical profession." Further on the profession is divided into three types:

"Today physicians classify roughly into three types: 1. Men who seek to restrict their practice to comparatively few patients, charge high fees, keep regular hours, take time to search the literature and sincerely try to practice medicine scientifically—a very small class accused by many of making exorbitant charges, which, all things considered, is not true. 2. Men who take all comers, make comparatively low charges, rush madly from case to case, claim to have no time to read or attend meetings—a very large class indeed. 3. Men who rapidly sink into a slough of squalor, have salaried appointments which amount to sinecures, or in private practice do the least possible work, who are careless, deliberately unconscious and too utterly lazy to use their brains, read or attend meetings—fortunately a small, but yet a very nefarious class."

Harding asks in chapter headings such questions as ARE PHYSICIANS HUMANE?, DO DOCTORS ERR?, WHERE DOES MEDICAL QUACKERY BEGIN?, HOW CAN YOU CHOOSE A GOOD DOCTOR?, and he devotes other chapters to such subjects as THE PROBLEM OF MEDICAL INTELLIGENCE, and THE CHARACTER OF MEDICAL JOURNAL ADVERTISING.

Here is a documented book that should be read by every physician. Every physician who is alive to the fact that in the orderly process of progress medicine is passing through a rather rapid transition period—A process that medicine for generations has been going through, and in the future will continue to go through.

When you read it you will realize why Van Buren Thorne, in the NEW YORK TIMES BOOK REVIEW entitled his review "MEDICAL PRACTICE IN ITS RACKETEERING ASPECTS" and also why, in closing his BOOK OF THE WEEK George Currie in the BROOKLYN DAILY EAGLE, said the following:

"But the faithful family doctor, who gets out of bed at 3 A.M. to drive through rain and sleet to advise new parents all the baby needs is a good spanking, or who sits up all night, slaving to bring a patient through the crisis of typhoid or pneumonia, for all his shortcomings must remain a part of the social structure of the nation. Nobody is so trusted, and from a layman's point of view, this writer would like to ask, few so seldom betray their trust."

Again we say—Physicians, read this book.

A. N. T.

Chronic Arthritis and Rheumatoid Affections

CHRONIC ARTHRITIS AND RHEUMATOID AFFECTIONS WITH RECOVERY RECORD. By Bernard Langdon Wyatt, M.D., with the collaboration of Louis I. Dublin, Ph.D. New York, William Wood & Company, 1930. 106 pages. 8vo. Cloth, \$2.50.

This study of Chronic Arthritis and Rheumatoid Affections is a most excellent one both for the general practitioner and the doctor specializing in these conditions. Dr. Wyatt has no panacea nor any pet methods to accentuate. He considers the problem with an exceedingly broad vision and carefully reviews basic factors such as family tendencies, climate, etc. It is an interesting observation that no resident in Arizona is a rheumatic and that in the war draft this state had the lowest percentage of arthritics. Foci of infection although seriously considered are not stressed beyond metabolism, climate or trauma. In other words the various phases of the problem are equally considered. Early recognition is urged, for the author realizes the complications of multiple involvement of joints.

A considerable portion of the book is devoted to treatment, and vaccines, foreign proteins, diet and metabolism are considered. Physio-therapy to the author mean not only electrical driven instruments but true physio-therapy, such as exercise,

hydrotherapy, helio-therapy and massage. A most excellent chapter on joint exercises, joint movements and massages is contained in this book.

We feel that the literature of arthritis is much richer through the addition of this intelligent, well balanced work of Dr. Wyatt. Ja. C. R.

Exchange of Energy Between Man and Environment

THE EXCHANGE OF ENERGY BETWEEN MAN AND THE ENVIRONMENT. By L. H. Newburgh, M.D. & Margaret Woodwell Johnson, Ph.D. Springfield, Charles C. Thomas, 1930. 104 pages. 8vo. Cloth, \$2.00.

This well edited book is a short, terse monograph; a compilation of a series of lectures delivered to third year medical students. The technical details of measurement and the methods of use in the practice of medicine are eliminated. The book is very interestingly compiled. The history of calorimetry and the insensible loss of body heat are stressed.

B. SELIGMAN.

Stammering

STAMMERING. By Elsie Fogerty. With an Introduction by Elizabeth D. McDowell, M.A. New York, E. P. Dutton & Company, 1930. 94 pages. 12mo. Cloth, \$3.95.

Stammering is a subject which interests the educator tremendously, as he is constantly confronted with a group of pupils who are handicapped by this disorder. Hence it is quite natural that educators should evolve methods of approach in managing this disorder. Miss Fogerty had to cope with this problem in her daily routine in training pupils in correct English speech. Her book is a practical outline to be used by parents and teachers in their effort to correct stammering. It is a small but valuable book, and one worthy of study by physicians.

IRVING J. SANDS.

Text-Book of Practical Therapeutics

A TEXT-BOOK OF PRACTICAL THERAPEUTICS with especial reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By Hobart Amory Hare, M.D. Twenty-first edition. Philadelphia, Lea & Febiger, 1930. 1104 pages, illustrated. 8vo. Cloth, \$7.50.

The twenty-first edition of this familiar textbook—now in its fortieth year of usefulness—shows thorough revision. The convenient alphabetical arrangement of much of its contents is still adhered to. Such up-to-date topics as bismuth in syphilis, viosterol in rickets, ventriculin in pernicious anemia, and salyrgan in cardiac dropsy are thoroughly and interestingly discussed. This book can be depended upon, as heretofore, to give the practical man exactly the kind of therapeutic information he needs for rational application at the bedside and in the office.

A. C. J.

Insomnia: How to Combat It

INSOMNIA: HOW TO COMBAT IT. By Joseph Collins, M.D. New York and London, D. Appleton & Company, 1930. 181 pages. 12mo. Cloth, \$1.50.

After discussing the nature of sleep and the varieties of insomnia the author presents some of the theories as to the underlying causes of sleep, that is, the physical and chemical changes that occur in the brain and other parts of the body. Among the theories the latest is that sleep is the result of inhibition from within of conditioned reflexes as first described by Pavlov. He illustrates what conditioned reflex is in this way. "When a dog sees food the sight of it provokes a flow of saliva. If one takes a young dog and shows him food, and rings a bell simultaneously, saliva is secreted. After a time saliva is secreted when the bell is rung and there is no meat in sight. That constitutes a reflex action when the real stimulus is absent. That constitutes a conditioned reflex." In order to fall asleep an individual has to shut himself away from all outside contacts and become immune for the time being to all stimuli, external as light and noise and internal. When sleep fails to come, according to this theory, it is because inhibition of these conditioned reflexes is not obtained.

Tranquility and control of the mind are necessary to overcome insomnia and various means of acquiring these are described in an entertaining fashion. The author's style is pleasing and physician and patient should find the book a very helpful one.

W. E. MC COLLOM.

Our New Progress

OUR NEW PROGRESS. Two Essays—Cornucopia and Caritas. By James Bayard Clark. New York: London, G. P. Putnam's Son's, 1930. 128 pages. 8vo. Cloth, \$2.00.

Dr. Clark's latest contribution to the literature of medicine consists of two essays—Cornucopia and Caritas. In the first he analyses prosperity and in the second he discusses charity. Prosperity, it appears, is a cancerous growth, exploitative of the many and fatal to the self-sustaining faculty of man and his

institutions. The industrial imperialists and philanthropists who create it are responsible for our mass production of dependency, disease, insanity and crime. The mental slavery, social inequality and sense of inferiority sedulously established in the masses by the exploiting class have made the world safe for Dr. Clark's villainous plutocrats. The basic trouble is that these social raiders have obeyed their Puritanical Christianity when it said: Go out and get it, but have then been commanded by the same pious voice not to touch the booty, for enjoyment is evil. The upshot has been—the Foundations, the modern medical schools, subsidized education and, foulest of all, charity. It seems to us

that Dr. Clark is a bit of a Puritan himself in evincing such great reluctance to accept any of the plutocrat's tainted gold, and a bit naive in assuming that so much of the money handled by organized charity reaches the hypothetical recipients. But we wish to be fair and no summary in this fashion can be quite fair, since it is possible, without intending to, to give the impression that Dr. Clark's book is not a very earnest and capable grappling with very vital problems. It should be read by his colleagues as a valuable analysis by one experienced critic of the system in which some of us are trapped and in which some of us help to bait the traps.

BOOKS RECEIVED

Books received for review are acknowledged promptly in this column; we assume no other obligation in return for the courtesy of those sending us the same. In most cases, review notes will be promptly published shortly after acknowledgement of receipt has been made in this column.

CINCHONA TERCENTENARY CELEBRATION AND EXHIBITION AT THE WELLCOME HISTORICAL MEDICAL MUSEUM. (Souvenir) London, The Wellcome Foundation Ltd., 1930. 115 pages, illustrated. 8vo.

METHODS AND PROBLEMS OF MEDICAL EDUCATION. (Eighteenth Series). New York, The Rockefeller Foundation, 1930. 329 pages, illustrated. 4to.

FADS, FRAUDS AND PHYSICIANS: Diagnosis and Treatment of the Doctors' Dilemma. By T. Swann Harding. New York, The Dial Press, 1930. 409 pages. 8vo. Cloth, \$3.50.

ABDOMINO-PELVIC DIAGNOSIS IN WOMEN. By Arthur John Walscheid, M.D. St. Louis, The C. V. Mosby Company, 1931. 1000 pages, illustrated. 4to. Cloth, \$12.50.

THE PRACTICAL MEDICINE SERIES. Comprising Eight Volumes on the Year's Progress in Medicine and Surgery. Series 1930. General Medicine. Infectious Diseases. By George H. Weaver, M.D. with the collaboration of T. T. Crooks. M.D. Diseases of the Chest (Excepting the Heart). By Lawson Brown, M.D. Diseases of the Blood and Blood-Making Organs; Diseases of the Kidney. By George R. Minot, M.D., S.D., and William B. Castle, M.D. Diseases of the Heart and Blood Vessels. By William D. Stroud, M.D. Diseases of the Digestive System and Metabolism. By Ralph C. Brown, M.D. Chicago, The Year Book Publishers, 1930. 848 pages, illustrated. 12mo. Cloth, \$3.00.

Eye, Ear, Nose and Throat. The Eye. By Charles P. Small, M.D. The Ear. By Albert H. Andrews, M.D. The Nose and Throat. By George E. Shambaugh, M.D. With the collaboration of Elmer W. Hagens, M.D. Chicago, The Year Book Publishers, 1930. 568 pages, illustrated. 12mo. Cloth, \$2.50.

CLINICAL ALLERGY particularly ASTHMA and HAY FEVER: Mechanism and Treatment. By Francis M. Rackemann, M.D. New York, The Macmillan Company, 1931. 617 pages, illustrated. 8vo. Cloth, \$10.50.

YOUR VISION AND HOW TO KEEP IT. By H. G. Merrill, M.D., F.A.C.S., and L. W. Oaks, M.D. New York and London, G. P. Putnam's Sons, 1930. 145 pages, illustrated. 8vo. Cloth, \$1.50.

THE PATHOLOGY OF INTERNAL DISEASES. By William Boyd, M.D., M.R.C.P. Philadelphia, Lea & Febiger, 1931. 888 pages, illustrated. 8vo. Cloth, \$10.00.

EXERCITATIO ANATOMICA DE MOTU CORDIS ET SANGUINIS IN ANIMALIBUS. (Anatomical Studies on the Motion of the Heart and Blood.) By William Harvey, M.D. An English translation with annotations by Chauncey D. Leake. Springfield, Illinois, Charles C. Thomas, 1931. 150 pages, illustrated. 8vo. Paper, single copies \$1.00. 25 or more copies 90¢ per copy, less discount of 25%.

TRAUMATOOTHERAPY: The Treatment of the Injured. By John J. Moorhead, B.Sc., M.D. Philadelphia and London, W. B. Saunders Company, 1931. 574 pages, illustrated. 8vo. Cloth, \$7.00.

PRACTICAL RADIATION THERAPY. By Ira I. Kaplan, B.S., M.D. With a special chapter on applied x-ray physics by Carl B. Braestrup, B.Sc., P.E. Philadelphia and London, W. B. Saunders Company, 1931. 354 pages, illustrated. 8vo. Cloth, \$6.00.

MODERN SURGERY: General and Operative. By John Chalmers Da Costa, M.D., LL.D. Assisted by Benjamin Lipschutz, M.D., F.A.C.S. Tenth edition. Philadelphia & London, W. B. Saunders Company, 1931. 1404 pages, illustrated. 8vo. Cloth, \$10.00.

A MANUAL OF THE COMMON CONTAGIOUS DISEASES. By Philip Moen Stimson, A.B., M.D. Philadelphia, Lea & Febiger, 1931. 351 pages, illustrated. 8vo. Cloth, \$3.75.

HANDBOOK OF DISEASES OF INFANTS AND CHILDREN for students and practitioners. By F. M. B. Allen, M.D., M.R.C.P. New York, William Wood & Company, 1930. 595 pages. 8vo. Cloth, \$5.00.

THE CLINICAL INTERPRETATION OF BLOOD EXAMINATIONS. By Robert A. Kilduffe, A.B., M.D. Philadelphia, Lea & Febiger, 1931. 629 pages, illustrated. 8vo. Cloth, \$6.50.

RECENT ADVANCES IN HAEMATOLOGY. By A. Piney, M.D., Ch.B. Third edition. Philadelphia, Blakiston's Son & Co., Inc., 1931. 348 pages, illustrated. 8vo. Cloth, \$3.50.

PARALYSIS GENERALE ET MALARIA THERAPIE. By R. Leroy et G. Medakovich. Paris, G. Doin & Cie., 1931. 480 pages, illustrated. 8vo. Paper, 80 francs.

ANTE-NATAL CARE: including the abnormalities associated with pregnancy and a section on post-natal care. By W. F. T. Haultain, O.B.E., M.C., and E. Chalmers Fahmy, M.B., F.R.C.S.E. Second edition. New York, William Wood & Company, 1931. 127 pages, illustrated. 12mo. Cloth, \$2.25.

INFANT FEEDING IN GENERAL PRACTICE. By J. V. C. Braithwaite, M.D., M.R.C.P. New York, William Wood & Company, 1930. 140 pages. 12mo. Cloth, \$1.75.

PYE'S SURGICAL HANDICRAFT: A Manual of surgical manipulations, minor surgery, and other matters connected with the work of house surgeons and surgical dressers. Edited by H. W. Carson, F.R.C.S. Tenth edition. New York, William Wood & Company, 1931. 641 pages, illustrated. 8vo. Cloth, \$7.00.

A TEXT-BOOK OF MEDICAL JURISPRUDENCE AND TOXICOLOGY. By John Glaister, M.D., D.P.H., in collaboration with John Glaister, Jr., M.B., Ch.B. Fifth edition. New York, William Wood & Company, 1931. 934 pages, illustrated. 8vo. Cloth, \$8.50.

Results of Subsidy Law in California

The program of prevention and cure that the California Bureau of Tuberculosis has been carrying on since 1915, when the Legislature passed the Subsidy Law, is beginning to show very marked results. The State has spent \$3,000,000 in the subsidy to patients cared for at public expense at the rate of \$3 a week.

The counties, stimulated by State aid and the standard requirements to make them eligible for it, have spent over \$33,000,000 in buildings and maintenance since the law was passed. In this same period 25,000 patients have been cared for in the hospitals at public expense and a large number of pay patients and part pay patients, numbering probably 5,000, have also been cared for.

The most significant part of all this is the drop in the death rate from 189 per 100,000 in 1915 to 106.8 in 1929, a drop of 83 points in 14 years. When the National Tuberculosis Association made the announcement that the death rate in the registration area had been cut in half in 25 years, it was supposed that it was the most spectacular reduction that had been made in the tuberculosis death rate any place in the world. In 14 years California has done considerably better.

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DOCTORS GUIDE TO BUSINESS LITERATURE

This free service is arranged so that busy physicians need write only one letter to obtain the literature and samples of as many manufacturers as desired. The list contains the more important business literature published by manufacturers of pharmaceuticals, physicians' supplies, foods, etc. Merely list the key numbers of all publications desired and send your request to MEDICAL TIMES & LONG ISLAND MEDICAL JOURNAL, 95 Nassau Street, New York.

ARTIFICIAL LIMBS

- MT- 81 "Manual of Artificial Limbs." Copiously illustrated with 359 pages. A. A. Marks.

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Gastric Syphilis

Syphilis of the stomach is relatively more frequent in occurrence than the number of reported cases would appear to indicate; and the importance of a correct diagnosis of this condition is not yet thoroughly appreciated.—Leon T. LeWald, M. D., in *J. A. M. A.*, Jan. 17, 1931.

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Dr. Fitch—At French Lick Springs

The French Lick Springs Hotel Co., French Lick, Ind., announce to the profession that effective March 1st, 1931, Dr. William Edward Fitch will be Medical Hydrologist and Medical Director. Dr. Fitch, for many years past, has been Medical Director of the Bedford Springs, in Pennsylvania.

Dr. Fitch was at one time, lecturer on the principles of Surgery at Fordham University School of Medicine, and connected with the Vanderbilt Clinic, Presbyterian and St. Luke's Hospitals, in New York City. He is the author of "Fitch's Pocket Practice of Medicine" (7th edition), "Dietotherapy", 3 volumes, eight hundred pages each (2nd edition), and "Mineral Waters of the United States and American Spas." The latter, the only work on the subject to appear in this country in the past thirty years. He is an expert in Diseases of metabolism, Dietotherapy and Medical Hydrology.

In recognition of his expert knowledge on mineral waters, the International Society of Medical Hydrology has recently appointed Dr. Fitch a member of The Commission on standard

mineral water (analyses) "measurements" to standardize the expression of Mineral water analyses in all languages and in all countries, an unusual honor, as Dr. Fitch is the only member of the Commission from the United States.

Dr. Fitch comes to the French Lick Spa with a well rounded experience in Spa management and Spa treatment. He is a member of many National, International scientific societies, as well as patriotic and social organizations.



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Medical Director

Childhood Psychiatry

It seems to me that the safest guide in approaching the mental health of childhood is a good general background in the field of medicine which includes training and a practical working knowledge of the integrated mental and physical functioning of a human being. The time is coming when every medical school will follow the example of the larger medical institutions of learning and place psychobiology and psychiatry on exactly the same basis in the curriculum as physiology and internal medicine. Rotating hospital services will include periods of resident training on psychopathic wards and in psychiatric dispensaries. The physician with this background of medical school and hospital training will then be equipped not only to treat the health of the child as a whole with a feeling of reasonable security, but also to utilize and correlate a wealth of helpful contributions from the broad field of education, psychology, sociology and psychiatry.—Esther L. Richards, M. D., in *J. A. M. A.*, Oct. 4, 1930.

Calcium Type Tonic Widely Used in Pregnancy

Not so long ago people believed that the mother had to lose a tooth for every child she bore. Every one recognizes this to be a superstition today; but like many old superstitions it has same basis in fact. The fact is that a tremendous amount of calcium is required for a developing foetus. Unless the mother's diet furnishes this salt in abundance, the foetus will draw upon the mother's own calcium reserve. All too frequently a woman's teeth decay for this very reason.

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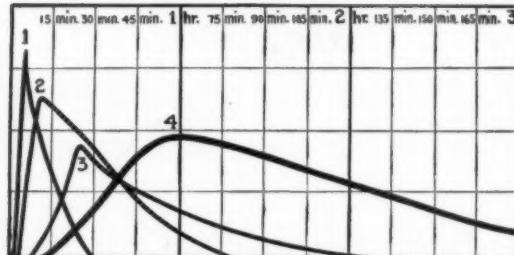
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Effects of Superficial Burns

At first thought it may seem far fetched to assume that the "oozing" from a superficial burn, or the accumulation in a burn blister may be sufficient to produce loss of water sufficient in magnitude to interfere with bodily functions. In animal experiments involving superficial burns over approximately one sixth of the body, however, it has been found that the water loss to the blood may reach as much as 70 per cent of the total blood volume. It is probable that with larger areas injured by heat the water loss may be much greater. The edema fluid produced by an extensive superficial burn so closely resembles the serum of the blood of the burned animal that it must be regarded as blood plasma. Underhill has further pointed out that the significant fluid loss induced by an extensive superficial burn does not alter the composition of the tissues with respect to water, ash and chloride contents. The degree to which these substances may be lost to the blood without essential modification of the tissues is noteworthy, he adds, and presumably the composition of the tissues is conserved in preference to that of the blood. No one will question the untoward influence of the resultant anhydremia with its impaired circulation and consequent anoxemia. Underhill has pointed out that a concentrated blood means a failing circulation, an inefficient oxygen carrier, oxygen starvation of the tissues, a fall of temperature, and finally a suspension of vital activities. The need of prompt replacement of fluid to secure an efficient circulation is thus made obvious. Fortunately, the blood concentration can readily be followed with sufficient accuracy for clinical purposes by means of bedside estimations of its hemoglobin content.—Editorial, *J. A. M. A.*, Jan. 17, 1931.

Cervical Polyp

Carcinomatous degeneration of cervical polypi is of rare occurrence. A case is reported of a widow, aged forty-seven, in whom pathological examination of the excised polypus showed it to be the seat of a typical squamous cell carcinoma. Yet, when panhysterectomy and double salpingo-oophorectomy were performed, the most minute examination failed to disclose any evidence of malignancy elsewhere in the reproductive tract. Apparently, carcinoma of cervical polypi is more malignant pathologically than clinically.—STEIN, *Am. J. Surgery*.

Therapy of Food Allergy

Brown has recommended the use of pepsin and dilute hydrochloric acid as a method of control of food allergy. Sansum advises the use of citric acid and salol-coated pancreatin for the same purpose. In fact such therapy was suggested in the original monographs on food allergy by Barntahan and Laroche, Richet and Saint Girons.—A. H. Rowe, M. D., in *Cal. and Western Med.*, Nov., 1930.

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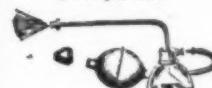
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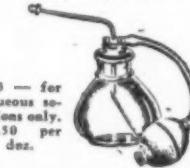
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Studies on Digitalis in Ambulatory Cardiac Patients
Gold and DeGraff assert that in the average ambulatory cardiac patient with auricular fibrillation and moderate heart failure a much lower "effective concentration" of digitalis in the body suffices to produce full therapeutic effects than is required in the average bedridden patient in advanced congestive failure. The authors have shown that, in the ambulatory patient, full therapeutic effects, as judged by the usual clinical criteria of improvement, can be produced by the daily repetition of a relatively small dose of the drug that can then be continued as the daily maintenance dose without producing toxic symptoms. It is well known that such results cannot be obtained with such small doses in the average patient with far advanced congestive failure; the larger daily doses usually required in these cases cannot be long continued without producing toxic symptoms. In the average ambulatory cardiac patient there is a wide margin between the minimum dosage that produces full therapeutic results and the maximum that can be tolerated without toxic symptoms. This margin is frequently smaller in patients with far advanced failure and the latter often require the largest dosage

that can be tolerated in order to produce the best results. It is the accepted practice to use relatively larger doses of digitalis to produce the full therapeutic effects and then relatively smaller daily ones in order to maintain these results for long periods of time. The usual explanation is that the smaller doses are necessary in order to maintain the high "effective concentration" of the drug produced by the larger ones. Evidence has been set forth proving, however, that the "effective concentration" of the drug within the body necessary to maintain the full effects is usually much lower than that required to produce them in the beginning.—J. Am. M. Ass. 95: Oct. 25, 1930.

Inflammations of the G.-U. Organs

As a restorative tonic for the urinary and reproductive organs and to reduce inflammations present in the abnormal conditions of these organs, Sanmetto has no peer. It is said that it has moderate diuretic properties. This is true, but it must not be considered an active stimulating diuretic, such as buchu and juniper, drugs that are actually contra-indicated in acute inflammatory conditions. In all inflammations of the lining mucous membranes of the genito-urinary tract found in urethritis, cystitis and pyelitis, Sanmetto can always be depended on as an unfailing help because its action is invariably soothing and healing. That it has marked sedative action in an irritable bladder and urethral canal will be quickly recognized. Some authorities claim that it will restore tone and strength to the musculature of the bladder. If this be so it is not improbable that it will improve the functional activity of that organ.

Medical Work in Federal Prisons

A more intimate knowledge of the mental characteristics of prisoners should contribute to a better understanding of several features of the present correctional systems generally, according to the Public Health Service. This will be brought about, it is hoped, by the supervision of hospital work in the prisons by the Public Health Service.

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